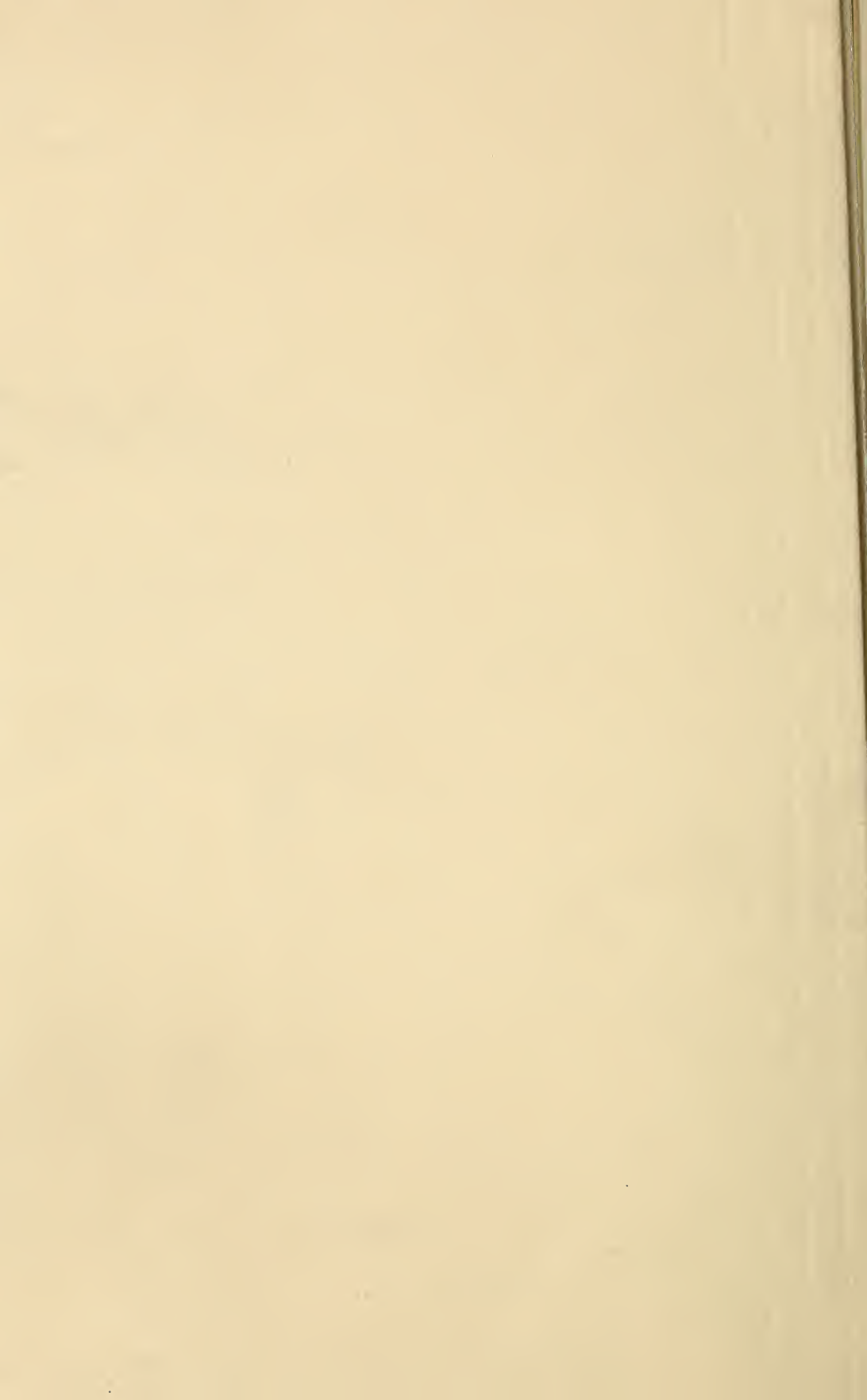


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GLEANINGS

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS.

BEE CULTURE

ILLUSTRATED SEMI-MONTHLY
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STRAY STRAWS

FROM DR. C. C. MILLER.

WHITE CLOVER at Marengo yielded honey $5\frac{1}{2}$ weeks, closing July 20.

A FEW SEASONS like the present and I shall have to get a new stock of sections.

BROOD-COMBS $1\frac{3}{8}$ in. from center to center leave a bee-space of $\frac{3}{8}$ to $\frac{1}{2}$ inch where brood is raised, being nearly double that left at the upper part where the sealed honey is.

R. F. HOLTERMANN, the new editor of the *Canadian Bee Journal*, is a live bee-man and an enthusiast, and ought to give the Kanucks a wide-awake, practical bee-journal.

COMBS OF HONEY were put into my shop-cellar during fruit-bloom, for the bees to clean out. Except an occasional bee, they wouldn't touch it till the close of linden and white clover. Then they made short work it.

THE LARRABEE ESCAPE is nearly as good as the little mosquito-net tents to put on top of a pile of uppers, and is handier. It has the advantage over other escapes for this purpose, that it lets more light through.

WHAT MAKES the terribly offensive smell that sometimes comes in hives, like that from dead mice? This year it was just at the close of linden and white clover, but I don't know whether it was at the same period other years.

ONE ADVANTAGE, and not a slight one, that a record-book has over any system of temporary markings, such as stones on a hive or slates, is, that you can refer to your book years afterward. In this way the experience of a past year can be drawn on for future guidance.

I MEASURED the space left between sections without separators. As nearly as I could measure, it was a quarter of an inch. When separators were used, the same space, $\frac{1}{4}$ inch, was left between the face of the comb and the separator. Is this the uniform measurement, or do the bees vary?

A NEW BEE-ESCAPE from R. J. Stead, of Canada, strikes off in a new line; keeps the bees shut up in the super for half an hour or so till they get crazy to get out, then lets them all out like a flock of sheep. If it always works as well as during the one trial I have given it, it will stand at the head for rapid work.

W. C. FRAZIER thinks many reach conclusions too hastily—"go off at half-cock." Cases reported of worker eggs changed to drones, and queens raised from some of the unchanged

eggs, would, he thinks, if patiently investigated, prove to be the work of laying workers, and the supposed queens to be nothing but drones.

I HAVE BROOD-COMBS that have stood outdoors in hives for two years without being troubled by worms. They stood unoccupied without any protection of any kind, and might stand thus for many years after being through the first winter's freezing. But they get very dry and brittle. They keep in better shape in a dry cellar.

"ONCE A ROBBER always a robber," seems to be the traditional belief with regard to bees. I don't believe it's correct. Don't you know how robbers will sometimes whip you out, and then the very next day not trouble at all? They haven't all died in the meantime, have they?—just gone to honest work, a fresh flow of honey having started.

THE WORD "BEE," in addition to the various ways in which it is used in different languages as given in last GLEANINGS, has the following, for which I am indebted to W. P. Root, the man who puts my commas in the right place and straightens out my English: Hungarian, *mehe*; Roumanian, *albi*; Slovak, *v'cha-la*; Servian, *p'cha-la*; Turkish, *ahroo*.

THE GOOD YIELD of honey, it seems, has not been universal. July 17, E. Kretchmer, of Iowa, had received no response to 1000 circulars sent out asking for honey for the World's Fair, and reports not a single colony of his own bees working in sections. A correspondent south of me in Illinois reports no surplus from clover, and some colonies nearly out of honey.

MY PUNIC HALF-BLOODS (I have two colonies) have proved themselves good workers, although cross, their most prominent characteristic aside from the glossy black color of the drones being their manner of filling sections. No air seems to be left between the honey and the capping, giving the sections a disagreeable, greasy appearance, the worst I ever saw. For comb honey they're no good.

THE OTHER DAY I saw a laying worker laying in a worker-cell. She looked very uncomfortable with her wings all pushed up about her head, and I suspect that accounts for the fact that laying workers always prefer drone-cells. They are more comfortable. Then they keep on laying over again in the same cells, rather than to take the more narrow and uncomfortable worker-cells.

A HYBRID COLONY may sometimes prove to have better workers than a pure one; but it doesn't follow from this that it is better to breed from the hybrid. There is not the fixed type in the hybrid that there is in the pure

blood, and it can not be relied on to reproduce itself. I'm not saying by this that careful breeding may not fix a valuable type of hybrids, but I doubt if such a one exists that equals the pure Italian.

I DON'T KNOW for sure, but I am of the opinion that queenless bees will store honey almost if not quite as well as those having a queen, provided they have empty combs to store in. But if comb has to be built, queenless bees seem a good bit behind. At any rate, after a good deal of experience with caged queens and queenless colonies in harvest time, I am strongly of the opinion that I never want a colony working in sections to be without a queen for a day.

ROBBING.

DOES IT OCCUR DURING THE HONEY SEASON?

A correspondent wishes me to tell him, through the columns of GLEANINGS, whether bees are subject to robbing during a flow of honey, and writes thus: "I see it recommended in a certain book that we should not try to remove the surplus honey from the hive immediately after a shower, in the honey season, for fear of robbing, thereby causing the bees to become very cross; the reason therefor being given, that the shower has washed the honey from the flowers, hence the bees are eager to rob. Do you find this so? With me the bees do not offer to rob till a day or two have elapsed after the bees have been gathering honey plentifully."

I would say that bees *are not* subject to robbing during a honey-flow, for this is the time, above all other times of the year, when they can fly, that they are the least inclined to rob. My bees act just as the correspondent says his do, for I never knew bees out in search of honey immediately after a heavy rain which came in the height of the honey-flow. During a heavy yield of honey the bees seem almost glad of a rest for at least 24 hours, especially if the weather is dull. I have taken off hundreds of times immediately after a shower, without being bothered by the bees trying to rob in the least. At such times each bee is so full of honey that, if squeezed a little, it will throw the honey out on its proboscis; and if jammed a little too hard the honey-sac (filled with honey) would burst through the sides of the abdomen. When bees secure honey rapidly, each bee takes all it can into its honey-sac, then throws it out on the tongue, draws it back again, then throws it out again, and so on to evaporate the watery part of it; for all nectar, when gathered, is so thin that it needs much reducing before it is of the right consistency to be sealed over. After all the thin nectar has been evaporated, then the bees begin to look around for more; and if the flowers fail to secrete any, robbing is the result where honey is left exposed; and all wise persons will avoid leaving honey exposed at such times. It takes about the length of time spoken of by our correspondent to reduce all the thin nectar in the hive to the consistency of honey after it has rained during a good honey yield.

BLACK BEES; HOW LONG DO THEY LIVE?

Another correspondent wishes me to tell "how long the German (or black) bee will live." This all depends upon the season of the year when the trial is made, and the condition of the colony. If in the summer or working season, 45 days will be about the length of life the

worker-bee will enjoy; while if during the fall and winter months, the time will be found to be from six to eight months. For instance, if we take away a black queen about the middle of June, and introduce an Italian queen in her place, we shall have Italian bees hatching 21 days thereafter, which date we are to mark on the hive as the time we are to count from, as there will be no black bees hatched after this. At the end of 40 days the black bees will be found to be very few in numbers, while at the end of the 45th day not a black bee will be found in the hive. If the colony is made queenless at 20 days after the Italian queen was introduced, then the length of life to the workers will be prolonged, on account of their not laboring so hard, for queenless bees never have that energy shown by those which have their mother with them; and it is the amount of labor done which has to do with the length of life given to our pets. Again, if the change of queens is made during the fall months we shall find plenty of black bees in the latter part of spring, although they soon disappear after the active labor of honey-gathering comes on. This length of life has much to do with spring dwindling, with preparation for winter, making new colonies, our surplus crop of honey, etc., and therefore should be understood by all. It is impossible to secure a good crop of honey where the most of the bees are nearly worn out with age just as the harvest is commencing; and where bees become uneasy in winter, and wear themselves out with worry, spring dwindling is sure to occur. So, all old bees in the fall will result in empty hives the next spring; and a divided colony, so made that one part contains all old bees results in no profit from that part. Let us be practical along these lines.

IMPORTED QUEENS BETTER THAN HOME-BRED.

I am asked by another party what I think of the claim made by some, that imported queens are superior to those bred in this country. I do not think that any proof can be found to substantiate such an assertion. In fact, I believe the balance of proof is on the other side. Very many have written me that they would not exchange their home-bred queens for imported stock on any account, as their honey-yields are much increased above what they were when they first obtained Italian queens from the old country. Queen-breeders on the other side of the water do not take the pains in breeding that we Americans do; for, if I am correctly informed, the most of the queens sent over here, unless it is very lately, are from a promiscuous selection, mostly taken from second and third swarms, on account of these swarms not being liable to winter. How much different the mode practiced by our best breeders! Queens are selected for generations, each selection being made from those which are the most hardy, and give the best results in every way; then the very best specimen is selected from the next generation, and so on, always selecting the queen each time which scores the highest number of points, till perfection is well nigh reached. It seems strange that any one can believe that queens from a promiscuous importation will equal queens bred with such care and painstaking. Where people are not satisfied with the stock they have, my advice would be, for all those so situated, to buy an imported queen, if they think them superior, and a home-bred one from some reliable party, and try the two equally, rearing as many queens from one as from the other, when they soon can tell which is the best for them. If they do not choose the home-bred queens, then I am greatly mistaken.

G. M. DOOLITTLE.

Borodino, N. Y.

RAMBLE NO. 90.

AT BRODBECK'S; DEVIL'S CANYON, ETC.

It would be a very interesting study for some patient antiquarian to look up all the various names, formations, and peculiarities of the thousands of canyons in this great State. Like "Old Mortality" among the graveyards of Scotland, he would grow gray before he could complete the job. In this State, among the various distinguished personages whose names are attached to canyons is that of the Devil. Devil's Canyon has its entrance near the town of San Bernardino; and from the number of saloons, and wickedness generally, in that ancient town, I should judge that the canyon was rightly named, and fully occupied by his satanic majesty. I had some curiosity in relation to that canyon, and, in answer to my many questions in relation thereto, a resident of the country near said that its wild and rough nature was one reason for its name; and, furthermore, that it was a very unlucky place in which to travel. Deaths and serious accidents had been of frequent occurrence; hunters have been found dead, or with broken limbs; horses have suddenly died; dogs utter long and unearthly howls, and animals of all kinds have a subdued aspect. My informant said that he never went through the canyon without a mishap of some kind, and he regarded it as an evil locality.



Although Devil's Canyon bears such an unenviable reputation, it has no visible manifestations of its nearness to the infernal regions below; but if we travel a little distance to the east, and climb into the mountains, we find all these visible manifestations; and hot water, steam, and sulphurous fumes greet us on every side; but here, instead of stumbling upon misfortune at every step, the traveler finds pleasure; and if an invalid, he finds healing for his disease; and the portion of the earth upon which we stand is widely known as the Arrowhead Hot Springs. The name is derived from an immense Indian arrowhead embossed, as it were, upon the almost perpendicular side of the mountain—the mountains here having an ele-

vation of several thousand feet. The great sign, 1360 feet long and 450 wide, is plainly visible from nearly all portions of the valley below, and from the Santa Ana Mountains, 30 miles away. As a curiosity it is as great as the "Old Man" on Mount Washington, in New Hampshire, or the "Holy Cross" in the mountains of Colorado. This sign was here when the white man first made his appearance upon the scene, and it is supposed to have been made by Indians hundreds of years ago to indicate the location of the springs, which were held in high repute by them for their healing powers. It is also said that the Mormon chief, Brigham Young, had a vision of this region, and sent a body of his followers to make a settlement here. They were instructed to travel until they should find the figure of an arrowhead upon the side of the mountain. After much hardship in crossing mountain and desert the weary emigrants found the sign and a permanent resting-place in the fertile valley below. Thus San Bernardino came into existence as a Mormon town, and there is still enough of the element here to support a church of the Latter-day Saints.

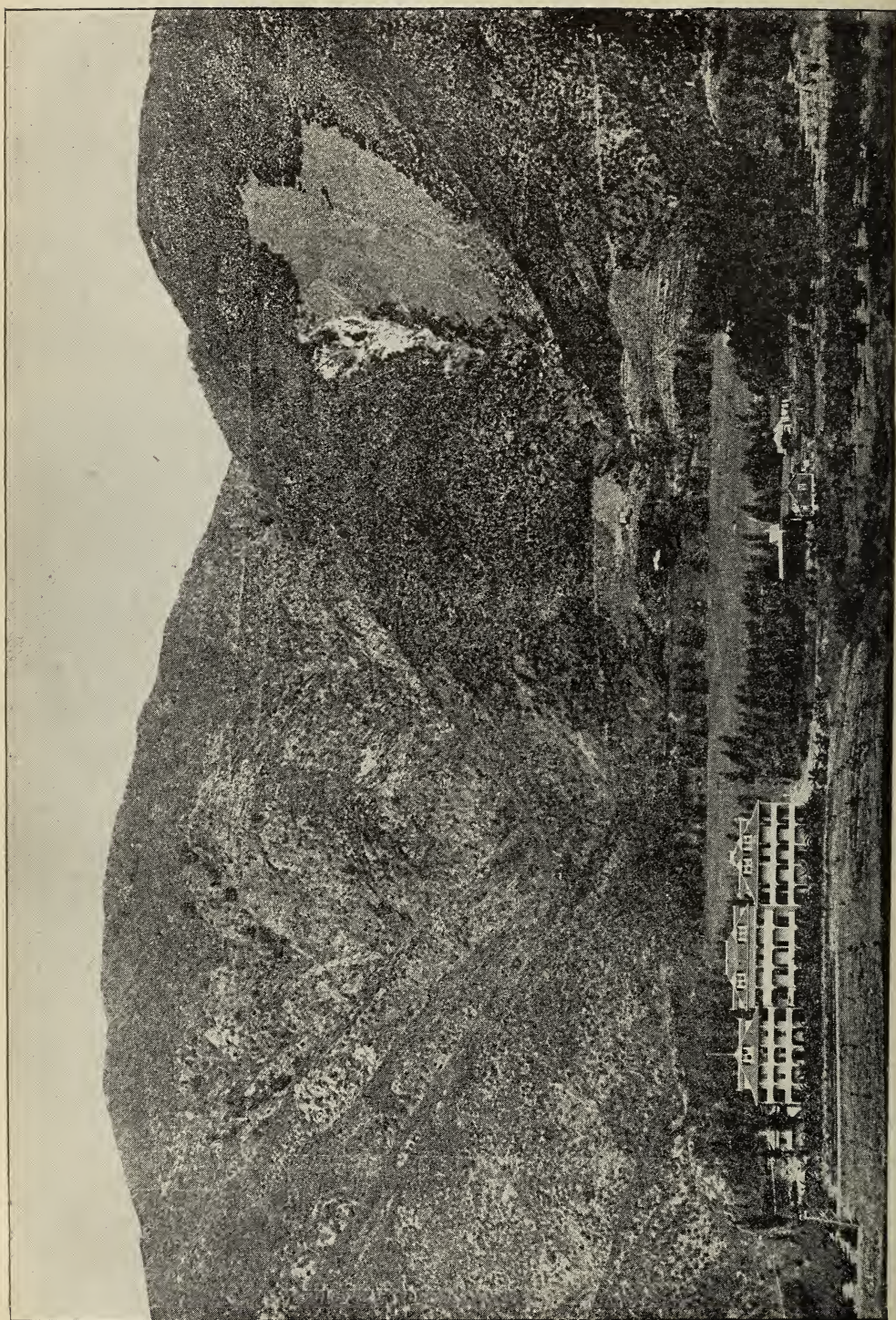
Ever since I entered the valley, nearly two years ago, I had desired to visit the place, and render my impressions to your readers through camera and pen. Our friend Mr. Brodbeck, of Los Angeles, having located an apiary in the immediate vicinity, I have taken the first opportunity after the busy season to pay my respects to him and Mrs. B. in their new and romantic home.

Mr. B. met me at Arrowhead Station, and at the first glance I found that outdoor life had given him a good healthy tanned skin, and I felt that he was one of us; and it also seemed more appropriate to talk bees with him out where the bees were humming than it would be in a drygoods store.

It required but a few minutes to find that Mr. B.'s horse was made after the same plan as Mr. McIntyre's, and it was necessary to push on the lines some in order to get him along. The owner also, like McIntyre, is a very indulgent driver, and Prince had nearly his own way, and he seemed to enjoy it, for it was a very warm day. It is a pleasure to say right here, while I think of it, that bee-keepers, as a general rule, and so far as my observation goes, have good horses, and they show good treatment. Truly, the bee-keeper is a merciful man.

When we left the station I remarked that it was about a mile to the point of the arrowhead.

"Yes," said Mr. B., "it is a good three miles, with some sharp grades to get up at that," and, sure enough, our journey proved that, in this case, as well as in many others in this country, the vision is no guide with which to judge distance. When we arrived upon the mesa, near the point of the arrowhead, we found that the hotel, which you can also see from the valley, is a very commodious and elegant building, patronized by tourists and invalids from all parts of the world. It has been established several years, and the grounds are finely shaded with gum and pepper trees, while the open spaces are beautified with various-hued flowers found only in this climate. The manager of the institution, Dr. W. Chapman, looks to the comfort and well-being of his many visitors. The elevation of 2000 feet above sea-level, shaded walks, the sound of rushing water in the canyon below and in the fountain near the hotel make it a desirable retreat from the heat and dust of the valley. From the hotel veranda a magnificent view is obtained, and the many thriving towns over a great area of country are plainly visible. We find here, close by, a cold-water and a hot-water canyon. The extremes meet in one common canyon below the hotel



ARROWHEAD MOUNTAIN, WITH HOTEL IN THE FOREGROUND, CALIFORNIA.

In the hot-water canyon we find the greatest wonder of the place—the hot and boiling medicinal springs. The principal and oldest spring is about three feet in diameter and one foot deep. The water bubbles up at a temperature of 193°, or within 19° of the boiling-point. It is a favorite practice to boil eggs in the spring. After an immersion of about ten minutes they are cooked hard. Mr. B., upon one of our journeys to the spring, provided the eggs and tea, and we had the pleasure of having our cooking done in what Mr. B. termed Mother Eve's tea-kettle; and what a nice provision it would be if the bachelors of California could have such an institution in their cabins! It would take away half of the vexations of cooking. As it is at present, a Mother Eve's tea-kettle means a Mother Eve to take care of it, and bachelors are not equal to such a situation.

A further stroll down the canyon revealed many other springs steaming from the fissures of the rocks, and the rocks themselves were hot from internal heat. Water from the cold-water canyon is brought in pipes to the bottom of the gorge, where there is hardly room for the little building, and under sufficient pressure to run a dynamo, giving light to the hotel and surrounding buildings. Several home-made Pelton water-wheels are also in use for pumping water and various other purposes.

Invalids indulge in mud baths, vapor baths, and, in fact, baths of all kinds, to suit their various ailments. The advantages claimed for a mud bath consist of the poultice operation of drawing out the disease. That these baths are of great benefit is attested by the fact that many persons afflicted with rheumatism have made their permanent abode in some of the surrounding cities in order to be near the curative agent. A mud bath, it is said, is a very agreeable and soothing experience. My rheumatism, however, would have to become quite acute to induce me to get into one.

The great arrowhead upon the side of the mountain gives an opportunity for every kind of business that is established within ten miles of it to prefix the word and represent themselves as an Arrowhead company. Thus at one time there was an Arrowhead Honey Company. The business was to be conducted on the nickel-plate style. The hives were placed in long sheds, and the stands were provided with anti-climbing supports, with various other fixtures in the same line; but the Arrowhead Honey Company was a failure, and ruins of the enterprise are all that is left of it. Mr. Brodbeck secured the right to place an apiary near the grounds occupied by the former company, and, having collected over 80 colonies in various nondescript hives, and transferred them to new L. hives, they were successfully moved by rail and wagon to their mountain home. His apiary is within ten minutes' walk of the hotel, in a beautiful wooded dell where you will next be taken by the

RAMBLER.

TWO USEFUL INVENTIONS.

THE PORTER BEE-ESCAPE AND THE FLANSBURGH SCREEN BRIDGE A SUCCESS.

For a number of years I have been and am still a reader of GLEANINGS. Among the many useful appliances invented by bee-keepers during its existence are two, which to me are indispensable. The first is the bee-escape invented by R. & E. C. Porter, Lewistown, Ill. This little automatic device for ridding bees from surplus boxes, etc., to any extensive bee-keeper producing comb honey, is as indispensable as is the movable-comb hive to improved

bee-keeping. If I should have to be deprived of its use, and also of the use of the screen bridge, invented by me a few years ago for cleaning section boxes on, I should choose to give up bee-keeping in my advancing years because the escape lessens labor, and the bridge keeps the sections clean, and saves time.

Before using the screen bridge I had to stop frequently to brush away the scrapings and wipe up dripping honey in order to keep the sections clean; but with the screen bridge both are avoided, as the scrapings and drips both go through the screen, and you keep your sections clean, and save the time of brushing away the debris. Shortly after I devised it I gave you a description of it, and was surprised to receive by return mail from you \$2.50. I described its use for you and other bee-keepers producing comb honey, expecting you would manufacture them for sale.

TO MAKE THE SCREEN BRIDGE.

Get out four pieces, 2x1½ inches: two pieces 11 in. long; two pieces 12 in. long; nail the ends of the pieces together so when nailed you have a square frame 12 in. each way. Get a piece of tinned wire cloth, cut 13 in. square, of about No. 14 wire, ½-inch mesh; fold the edges ½ in. over the edges of the frame; tack the edges outside the edges of the frame with small wire-netting staples; lay the screen on your table, and clean off your sections on it and be happy.

In a former issue of GLEANINGS I noticed that B. Taylor has invented a machine for rubbing or melting down partly drawn-out cells in section boxes, to be used the following season. I will give you a description of mine and how I do it. When the day is cool and the comb is brittle, I take a section in the left hand, holding it in a horizontal position, the fingers of the left hand supporting the comb on the under side; use the index finger of the right hand for a demolisher; rule off the drawn or partly drawn-out cells down to the septum on both sides of the comb; scrape them with a sharp knife on the inside and out, on the screen bridge described above, and they can be used with profit.

G. J. FLANSBURGH.

South Bethlehem, N. Y., July 17.

[The screen bridge referred to by our correspondent is no doubt a good thing. We presume the reason we did not make them in the first place was because they were so easily constructed that anyone could make them. We find, however, we have in stock what is called our ten-cent ash-sifter. It is a shallow tray, or box, 2½ inches deep and a foot square, with a wire-cloth bottom, with half-inch mesh. These sifters are made by the carload, and are sold at retail for only 10 cts. Of course, if sent by mail the postage will be extra. They can be used for their legitimate purpose of sifting ashes; or, if turned upside down, they may be made to answer as a bridge for holding sections while they are being scraped.

By the way, we should like to inquire here what sort of devices our comb-honey producers have been using for supporting the sections while being scraped. It would not do to set them on a bench, because the scrapings would adhere to the sections. Perhaps some have been using a barrel with coarse wire cloth stretched over the top. Please tell us how you do it, for within the next 30 or 60 days a good many sections will be scraped, and we shall want to know the best way of doing it.

Referring to friend Flansburgh's method of reducing the cell-walls to the septum, we would say that, no doubt, it can be done as he describes; but the B. Taylor implement is very much superior, both in point of speed and quality of work.]

THOSE OLD BEE-BOOKS.

ANOTHER PEEP AT THE "GOOD OLD TIMES."

The next book that claims attention has a title that is "all Greek" to me, for it is a Greek word printed in large Greek letters. It may be spelled in English, "Melissologia," meaning *a discourse on bees*. The title continues: "Being an enquiry into the nature, order, and government of bees; with a new and easy method to preserve them, not only in colonies, but in common hives, from that cruel death to which their ignorant, injurious, and most ingrateful owners so commonly condemn them." The author's name is Rev. John Thorley, of Oxford. "London, 1744. Sold at the Angel in the Poultry, Cheapside." Something besides "angels" gets into poultry around here.

This book contains 208 pages, about the size of this, printed in large clear type. It contains a considerable number of copperplate engravings, of a very high order. The first one represents three bees, each $2\frac{1}{2}$ inches long, and drawn with wonderful fidelity. It gives a view of the bee from above, beneath, and from the side. Except for the bands on the bees the picture would be a credit to a modern bee-book. Another plate tells us what a storifying hive was in those days. It consists of four eight-cornered hives, one on top of each other. The top one contains comb; under that we find the queen; under her, in his own hive, the drone; under him the worker. The whole hive reminds one of a concertina, and perhaps worked tolerably well. It seems rather top-heavy for windy weather, however. No mention of a frame is made as now used.

The author of this book had handled bees for forty years when he wrote; and his chief motive in doing so, apparently, was to counteract some of the infidelity of his time. He speaks of his day as "an age of reigning infidelity, when vice and immorality are under no restraint, but practiced with impunity, and without control, triumphing over all laws, both human and divine; when men not only attempt to degrade and villify the Sacred Oracles; look on the gospel as no better than a cunningly devised fable, and the most important truths as the greatest impertinences, and treat the blessed Author of our religion as a vile and wicked impostor, and even deny the being of God." This was the time when Wesley was beginning to beat back the torrent of skepticism which seemed even worse in the church (so called) than out of it. Voltaire's doctrines had poisoned the minds of even the elect, but yet many stood firm. Mr. Thorley tries to show God through the works of nature. The following quotation lacks nothing of sublimity: "Who, but a being of infinite perfection, could raise so noble and glorious canopy as these visible heavens, beautified and embellished with sun, moon, and stars? or lay such an area or floor as this terraqueous globe on which we tread and in which we fail—furnished with so great a number of proper inhabitants? An humble and serious view of these would lead men to the acknowledgment of a Supreme Being who formed both." Infidelity has assailed England as, perhaps, it has no other land; but Christianity has never yet been torn from its anchorage there.

In this book the names of about 500 persons appear who are "subscribers" to it; that is, they agreed to support it. Among these names I am pleased to see that of Philip Doddridge, the author of many of our best hymns.

In speaking of the incomparably greater skill shown in a bee-sting as compared with human works, Mr. Thorley describes some of the latter as follows:

"The author of Baker's Microscope says he saw in London a chaise made by Mr. Boverick, a watchmaker, with four wheels, and all the proper apparatus belonging to them, turning easily on their axles; together with a man sitting in the chaise; all formed of ivory, and drawn along by a flea. The whole weighed barely one grain. The same artist also made a quadrille-table, with a drawer in it, an eating-table, side-board table, a looking-glass, twelve chairs with skeleton backs, two dozen plates, six dishes, a dozen knives, as many forks and spoons, two salts, a frame and casters, together with a gentleman, lady, and footman, all contained in a cherry-stone, and not half filling it."

The argument from the above is, that the microscope shows that God has made a million times more than these things, and put them into a millionth of the space they occupy; and that, no matter how much we magnify, we find God has been at work before us, and that an infinity of his wonders can live and move in the eye of a needle as freely as the planets circle round the sun.

In speaking of the sex of bees our author seems to be in doubt, and says, "The decision must be left to future time, and to the generations which are to follow." Huber was born six years after this, and unraveled the mystery. Mr. Thorley reviews all the writers I have mentioned, in the vain hope of discovering what a drone is for. He concludes that, as colonies increase all summer without drones, "we may very justly draw the conclusion that drones are not males, neither have they any instrumentality in the generation of bees." [Laughter.] Here are some more of his conclusions:

Bees do not breed by copulation; common bees are neuter; they can not fill a hive with their own kind; without a queen-bee they can not breed.

O happiness! how far we flee
Thine own sweet paths in—
The make-up of a honey-bee!

Medina, Aug. 9.

W. P. R.

DO BEES GATHER SYRUP FROM FIGS?

WHERE THE "HOLY LAND" BEES CAME FROM.

Fig-trees are suggested for plantations by one of your correspondents on page 527, July 1. Although some kinds of figs will have a drop or so of syrup at the opening, when the figs are really past maturity, I think bees will never profit much by that. In Palestine, figs are grown to a great extent in some parts of the country; and an apary that we had very near Bethlehem was near fig-orchards. Part of them had their roots above the water, and consequently the fruit was a good deal more syrupy; and bees, in fact, visited them, but never any great harvest was had from them; while the trees planted along the mountain-side, far from water, are more solid. The fruit, although juicy, does not exude that sweet drop which, in fact, is considered as prejudicial to the fig. All around Bethlehem, fig-trees abound; and bees have been abundant there many years; but since all the environs have been planted to olive-trees, fig-trees, and vines, apiculture is impossible; and I do not know whether a bee-hive still exists there.

About two miles from Bethlehem there is an old citadel, and three big pools, said to have been built by Solomon. They are called by the Arabs, Solomon's pools. They supply Jerusalem with water—or, at least, they were built for that purpose, and the aqueduct still exists leading to the midst of the temple in Jerusalem. You

know, the place where the temple of Solomon stood is now occupied by a mosque built by one of the followers of the first Mohammedan conqueror of Jerusalem, Abd-el-Malek; still, as Omar Ben Chaber, the conqueror of Jerusalem, first built a small wooden mosque there, the beautiful building now there bears the name "Mosque of Omar." The Mohammedans call it the "Mosque of the Rock." The rock is believed to be the altar on which Abraham was ready to offer Isaac. But, to go back to our bees in the citadel. At the head of Solomon's pools and Solomon's sealed fountain, referred to by the king in Solomon's Song, 4:12, is a citadel to protect the waterworks. A garrison was kept there, from time immemorial. Gradually this has melted down to one soldier, or, rather, Turkish irregular—"Bashi-bazuk." In the citadel, bees have been kept also. My father had bees there for nearly forty years. In fact, the first Holy-Lands imported to America by Benton and Jones came from this place, whence they have been transported to Mt. Zion, and where the above-named gentlemen visited them. In the vicinity are fig-orchards too, but bees never gather any honey there, nor do they do so in the Greek convent, northwest of it—"St. George's insane-asylum." All these bees gather honey from the thyme, abounding in the mountains of Judea. The honey is taken from the hives at the feast of the cross, Sept. 15, and figs go on ripening till October; but no surplus honey is gathered after September, this being very late, for thyme ceases to blossom at the beginning of August. I'll send you, as soon as I can get them ready, a few views of the citadel and waterworks, combined with the bees.

PH. J. BALDENSPERGER.

Nice, France, July 21.

PAINT FOR BEE-HIVES.

PAINT SLIGHTLY TINTED WITH YELLOW
OCHER, VS. PURE WHITE PAINTS.

I notice in GLEANINGS for July 1st that you have changed your base on the paint question again; and I must say I think you "flop around" on this question the worst of any one I ever saw. The first 12 years of my bee-keeping I used pure white lead and oil; but for the last four or five years I have used a paint made of pure white lead and yellow ocher, as described and offered for sale in GLEANINGS, and I am much pleased with the ocher and lead paint. White lead is bound to chalk or scale off, while the ocher and lead paint will do neither. My object in changing the color of paint in my apiary was to save my eyes, which the reflection of the white on the hives was going to put out; and I find that the yellow does not hurt them. You say that dark paint draws heat. This is so; but what if it does? I have some 30 hives painted a jet black, and the bees suffer no inconvenience so far as I can see. My object in painting black was to see if the bees would winter or spring any better in dark hives; but I can see no difference. One color is just as good for the bees as the other. My hives are chaff packed in single hives. Color would have more effect; but the light straw color, as described and advertised in GLEANINGS, will be all right on any hive; will cost much less and last twice as long.

GEO. A. WRIGHT.

Glenwood, Pa., July 15.

[From the experiments we made last summer in this matter, placing hives side by side, one of the pairs being painted with pure white-lead paint and the other with pure lead tinted with ocher, we found that there was considerable

difference in the relative temperature of the cover-boards on very hot days. The yellow covers were so hot that we could not bear our hands upon them, while the white were very comfortable. Remember, these hives were side by side. The same sun was shining upon them the same day. We observed, also, that the colony in a yellow-tinted hive was fanning harder than the one in the white hive; for you remember that bees regulate the temperature of their hives by artificial currents which they make with their wings. Now, we do not take back one word we said in favor of the qualities of the ocher paint, and its tendency to harden and render more durable any pure-lead paint; but yellow is what is called by painters a "warm" color. The actinic (or heat-giving) rays seem to have a decided affinity for yellow—more so than for other pale tints. While our bees will get along very comfortably, there are localities where bees under yellow covers or in yellow hives would be seriously inconvenienced. Shade-boards might obviate the trouble; but in our wanderings among bee-keepers we find that shade-boards are rarely used. Now, there is another pigment that is, in its way, as durable as lead; and that is zinc. Experienced painters tell us that the most durable white covering is a coat of pure lead on the wood as a primer; then a coat or two of zinc and lead, mixed half and half. Pure white lead alone is liable to chalk. Pure zinc alone will flake. Combining the two we get a paint that neither flakes nor chalks; therefore, for bee-keepers' use we have decided to "flop" back again to pure white paint; and we therefore recommend pure lead for a priming coat; and for second coat, zinc and lead, both strictly pure, half and half. While the ocher tint—that is, a pure lead hardened up with a slight amount of ocher—may be more durable, the slight advantage gained in point of lasting quality is more than overbalanced by the fact that it is a warm color; and as a pure white paint put on in the above combination is about as lasting, we have decided to recommend it in preference to the other, even if we do have to "back water."

Now with regard to "flopping." Should we not be excusable on the ground stated on page 613? Does it not give evidence of candor? You remember we said that an experimenter who never changes his opinion is one whose opinion should not be trusted implicitly.]

THE NUMBER OF BEES IN A POUND.

HOW IT WAS FIGURED OUT BY PROFESSOR KOONS.

Friend Root:—In GLEANINGS for July 15 I saw the question asked as to the number of bees in a pound. Therefore I went to my apiary and took one bee from each of ten swarms, taking care to capture the bee as it came out of the hive, presumably intent upon an excursion for honey; for thereby I should be more likely to get all in a like condition, honey-sac empty, etc. I have pure Italians and hybrids; and in selecting the colonies from which to take each bee I took care to visit some of each; however, in making up the following table I paid no regard to whether the bee was Italian or not. I took the bees and placed them immediately in my cyanide-of-potassium jar for killing insects; and as soon as they were stupefied, which required but a very few minutes, I weighed them, thereby securing the bees as nearly as possible in their normal condition and weight. In our laboratory we have delicate chemical balances, capable of weigh-

ing an object much less than a millionth of a pound. Upon these I weighed each of the ten bees separately, and from these weights it was a simple problem in arithmetic to determine how many of the same size as each it would require to make a pound of bees. The following are the results:

No. 1—4141 bees in lb.	No. 6—4866 bees in lb.
" 2—4335 " "	" 7—4936 " "
" 3—4420 " "	" 8—5291 " "
" 4—4476 " "	" 9—5551 " "
" 5—4670 " "	" 10—5669 " "

From the above you will see that, of the largest bee, it would require 4141 to make a pound; and of the smallest, 5669; and an average of all these ten would require 4832, which, perhaps, it is safe to say is a fair average of bees in general. I should be glad to get the extremes. If any have very large or very small bees, and will send me a dozen, I will weigh and report upon them.

B. F. KOONS.

Connecticut Ag'l College, Storrs, Ct., July 28.

[We are greatly obliged to Prof. Koons—not so much because he has given us any *new* facts, but because he has corroborated with accurate instruments the estimates that have heretofore been made; namely, that a pound of bees, on an average, contains *about* 5000 bees; and this, we believe, is the number we gave in answer to our correspondent. Some eleven years ago E. E. Hasty, with scales of his own devising, verified these results very closely. See GLEANINGS (Juvenile), page 61, 1882. We do not now sell bees by the pound; but knowing the number in a pound, and knowing the average number of pounds in a colony, we can approximate very closely the number of bees that go to make up that colony. We have bought swarms that weighed 9 lbs.; but the average of good swarms, such as we used to buy of the farmers when they brought them in (for we always bought by the pound), weighed about 4 lbs.; so that there may be anywhere from 20,000 to 25,000 bees in a fair colony. Perhaps Prof. Koons would be interested in ascertaining the average weight of a bee-load. Mr. Hasty found that one bee could carry of honey considerably more than its own weight. His scales showed that, of unloaded bees, there were 4666 to the pound; and of those loaded, there were only 1832.]

A NEW SOLAR WAX-EXTRACTOR.

B. TAYLOR TELLS HOW HE USES ARTIFICIAL HEAT TO HELP.

What a nice thing it would be for every bee-keeper if he could have a solar wax-extractor for turning waste scraps of combs, and big pieces too, for that matter, into nice yellow wax, provided it would really do the work in good shape! I have tried nearly all the machines in the books, mentioned for that purpose. We always had lying around large quantities of big and little pieces of waste combs that were either melting in the sun, or, what was still worse, furnishing breeding-places for the bee-moth, that disgusting nuisance of the bee-keeper, and which we may well name "the bee-keeper's plague." But none of said machines gave entire satisfaction. They were slow and uncertain in operation. We made one on a large scale that took a glass 2x5 feet to cover it, the machine costing \$10.00; but it did not prove to be what we needed, and I gave it to my daughter to set in the cellar to keep bread and other foods secure from mice and roaches. All the machines tried would work to some degree, under favorable conditions, but

they all had one radical fault—lack of sufficient heat at the bottom.

This summer we went to work to conquer this "Petersburgh," even if it took the whole season; and after lying awake some time, for several nights, studying over the problem, we went to work. We procured a large tin dish-pan; made a hole in the bottom near the edge; soldered in a half-inch tube two inches long to convey the wax into a dish below. We next cut a circular piece of tin a little larger than the inside of the bottom of the pan; cut a piece out of one side, running to a sharp point at the center; drew these edges together, riveted them so as to have the center raised, in pail-cover fashion; trimmed down the edge to stiffen it, and laid it in the bottom of the pan. This circular piece is to keep the waste from the bottom of the pan, and to prevent choking the flow of wax.

We next took a glass as large as the top of the pan; put a sash around it, said sash being just large enough to go over the top of the pan and let the glass rest tightly on top of the pan. The extractor proper was now complete. We next made a can out of galvanized iron, something like an extractor-can without bottom, two feet high, and large enough in circumference so the extractor-pan would go into it half up its sloping sides. We wired the bottom end of the galvanized can, but left the top end sharp so it would fit the extractor-pan tightly. When pushed down properly inside of the galvanized can we cut a square hole, 6x8 inches, 6 inches from the bottom, and covered it with a movable slide. We next set the bottom can on a suitable board bottom and screwed it fast as you do your extractors. This can we now set in a protected corner on the south side of our shop, where the sun would shine most of the day, and set the extractor-can in the top of it, with the hole for the escape of wax at the south side, with a suitable vessel in the lower can for catching the wax. We set the lower can level, but the round sloping sides of the extractor-pan allowed it to beset at any needed angle to face the sun properly at different times of day, and the circular sloping sides of the pan keep it constantly in focus as the sun moves around. We next took a small hand oil-stove, that costs 75 cents here, and, lighting it, uncovered the square hole in the lower can, and set it in beside our pan for catching wax, leaving the door half open to give the stove needed air; filled the extractor with a quantity of combs, replaced the glass, and went into the shop to await the new birth. After a little time we returned to examined the new babe. Eureka! a bee-keeper's savior is surely born! Carry the news to Medina! The old black combs were gone, and the dish below was filled with splendid yellow wax. You can change the pitch of the pan to any needed angle in a moment by tilting the extractor-pan in the top of the open can below. This extractor will do the work certainly, and to perfection; can remain stationary for all time; is cheaply made; will not get out of order. Good-by, old carts. You have served your time. Adieu, old rheumatic friend. I shall make one of the new extractors on a large scale, mount it on our abandoned revolving hive-stand, where it will remain as a permanent fixture, and where it can be kept facing the sun at all hours by turning the hive stand by a touch of the hand.

Before closing, let me say that the honey crop here is fair. We put 24 colonies into our new house last spring, but four proved queenless, leaving 20 colonies. We made new colonies from these to fill the house, and it now contains 38 colonies. On these hives we have used to date 105 supers of 24 sections, and 90

per cent of them are filled with splendid capped clover and basswood honey to-day, and with half the honey season here yet to come. Why should we cry? The comb-leveler is to be charged with a large share of this mischief. The non-swarming hives are working nicely, and I hope to settle the non-swarming problem; but I shall not halloo until I know I am out of the woods for certain. B. TAYLOR.

Forestville, Minn., July 27.

QUEEN-CELLS FROM DRONE COMB.

VALUABLE HINTS FROM J. D. FOOSHE.

Friend Root:—I wrote an article some few days ago, giving the plan that I liked best for queen-rearing, in which I said that I preferred the cup plan; but before writing I had been experimenting with royal jelly by smearing the bottom of the cup with it; but it was a little awkward to apply. Since then I have struck on a plan by which royal jelly can be applied to the cells, and the cells grafted will live, at least two out of three, and that without the cups having to hang in a hive for the bees to glaze the bottom; and, would you believe it? also a plan to do away with the cups entirely by using drone comb for the purpose. Cut drone comb in strips and paste on bars, known as the Alley plan. I usually use three. Apply royal jelly to as many cells as needed, and hang the frame in the hive made queenless and broodless a few hours previous; but graft the cells immediately after applying the jelly or it will become dry and hard in a short time. These cells should be grafted at intervals, so when cut out they will leave other drone-cells on the bars for further use until all are used up, when they may be renewed. Rather shallow cells are better than the deeper ones.

The process of applying the jelly is this: Take a goose-quill, say 3 inches long; cut about two-thirds of its length about half away, forming a trough to hold jelly. Take a small wooden paddle and dip the jelly from any cell having been started about two days. Remove the larva and rake it into the trough, and, when ready to apply it (which should be at once after taking it from the cell), take a wire nail, holding the quill in the left hand, and, with the right, cut off as much with the head of the nail as wanted in a cell, and push it in to the bottom. The jelly in this way sticks only to the head of the nail toward the bottom of the cell.

There are two advantages in the jelly. 1. It seems to suck or pull the larva from the point of the instrument used, as soon as it touches it; 2. It is a suggestion to the bees as to its purpose. I don't think they use this jelly so much in feeding, but it answers the purpose to float the larva. Only a little in each cell is needed—enough to cover the bottom.

In putting the bars into the frame to receive the cells for the purpose, they should be fastened at each end with only one nail, so that they can be turned at any angle to suit the operator.

I give you this as I think it will prove valuable to me. For aught I know others may have adopted the same plan for cups; but if so I have not seen it; so if there is any thing new in it you may publish it. By adding young bees once a week, and feeding gradually, the same colony can be induced to rear queens for an indefinite length of time, provided the cells are taken from the bees before they are capped, and let them (the bees) remain so for five or six hours; they then realize their helpless condition. I believe that, with proper care, and

placing a colony in proper condition by feeding, etc., we can rear about as good queens out of season as in swarming season. I don't claim that we always do it, but that it can be done. Coronaca, S. C., July 22. J. D. FOOSHE.

HONEY FROM CUCUMBERS.

CUCUMBERS A VALUABLE CROP TO RAISE.

We have a "pickle-factory" here that does a large business, and gardeners and truckers plant hundreds of acres of cucumbers annually to supply it with green "pickles." The vines are now loaded with beautiful yellow bloom, which the bees daily visit, and which, when the weather is favorable, yields considerable honey. They also yield a rich yellow pollen which assists the bees greatly in building up for the fall harvest.

The honey from cucumbers, although generally limited in quantity, is of good quality, being of a rich golden color, and of good flavor, resembling very much the famous orange honey of California and Florida.

Cucumbers begin blooming at a time when there is very little other bloom, and not only serve a good purpose in assisting brood-rearing, but, continuing to bloom all through the month of August, they help to swell the supply of fall honey, and afford some excellent food for the bees to winter on. Besides affording pasturage for the bees, cucumbers are a source of much profit to those who engage in their culture, and furnish employment to hundreds of people in picking, and afterward in sorting and handling them in the factory; so that, taken all together, they are a valuable crop to raise. This year the factory pays 50 cts. a bushel for the green pickles; and as it costs only 15 cts. a bushel to have them picked, this leaves 35 cts. for the producer, fully half of which is clear profit. They will yield ordinarily about 200 bushels per acre.

Notwithstanding the fact that certain physicians have pronounced them a useless factor in our diet, I regard them as a pleasant relish and good appetizer, and as for such they are chiefly used I would pronounce them a valuable culinary adjunct. Then, too, the honey they yield is *all right*. W. J. CULLINAN.

Quincy, Ill., July 31.

A QUERY.

WHY ARE BEE-MEN SO GENERALLY GOOD?

I have often wondered at the difference, especially of character, between people of different professions. In thinking along this line, the question that oftenest presents itself is this: "What is there in bee-keeping that has so happy an effect on the moral nature of those who follow it for a livelihood?"

Perhaps you have never thought much about it; but are not most bee-keepers of your acquaintance honest, honorable, even Christian people? I don't mean by "bee-keeper" every one who owns a hive of bees, and perhaps sets great store by the old idea that bees work for nothing and board themselves, but that one who gives a fair proportion of his time to the care of an apiary—who is acquainted with his bees and his business.

What a contrast such an apiarist and a cattle-raiser present! Does the business make the difference? Or, were the ranchman and the apiarist always or naturally people of thus different temperaments, and choose their respective professions because of this difference?

Or will neither of these questions bring out the truth? But however accounted for, the dissimilarity has long made and still continues to make itself very noticeable. Notice the tone of those old bee-books W. P. R. has been reviewing to our edification. If you are acquainted with books on live stock, you can not fail to be struck by the difference of the authors' style and spirit.

I am aware that the entire quota of the goodness rightfully belonging to the manipulators of the royal family is not equal to 'he sum of human goodness (I am not a bee-keeper myself); but take note of the uniformly good character of the apiarist—big, little, and indifferent—of the bee-editor: of bee-men and bee-women generally; contrast it with that of the members of other rural or mechanical professions, and account for it if you can. JESSE W. NEWELL.

Farmersville, Ill., July 10.

NON-SWARMING ATTACHMENTS.

E. KRETCHMER EXPLAINS THE CAUSE OF THE REPORTED FAILURES.

Friend Root:—I have just read some of the difficulties encountered by several parties with the Langdon non-swarming attachment, which so nearly correspond with the troubles I encountered while using a similar arrangement in 1891, and which, we think, we have here in our apiary entirely overcome.

One of the causes of swarming is in attaching it too late after the bees have the swarming fever. We now overcome this by making the first change back after three days. Another is, insufficient ventilation. At first we gave additional ventilation by setting the bee-controller $\frac{1}{2}$ inch from the hive; later we constructed ventilators through the controller, but we soon found the chief cause of swarming arose from insufficient ventilation of the supers, and evaporation of the honey in the uncapped cells. When but one super is placed on the hive, the vapor is removed by fanning it out at the entrance, with considerable loss of labor; but think how much greater the labor must be when four or five supers are placed on one hive, with no increase in the size of the entrance, while the amount of vapor to be removed is not only fourfold in quantity, but the distance from the upper super to the entrance is also greater: all of it must be forced in an opposite direction, which, by the action of heat and atmosphere, rises instead of falling. The bees, unable to stand the almost suffocating vapor, desert the hive. It is not what I understand the word "swarming" means, as, under the circumstances above described, no queen-cells are started until after the queen has left the hive. I obviated this trouble by raising the roof and placing a ten-penny wire nail under each corner, which raises it enough for ventilation, yet admits no bees. To show my assistant what quantity of vapor does escape through this crevice I placed some ice in a glass globe with closed cover, and, after it became cool, I held its smooth sides near the opening under the roof, and I must confess it even surprised me to see what a large quantity of moisture condensed against the cool glass, just near the opening under the roof. When this condensing-glass was placed near the entrance of a colony, about equally strong, with the same number of supers and no upward ventilation, the amount of moisture condensed against the glass from the entrance was not one-fourth as much.

I am, therefore, of the opinion that, as soon as these special manipulations are more thor-

oughly understood, we shall have fewer reports of failures.

E. KRETCHMER.

Red Oak, Iowa, July 25.

HEADS OF GRAIN

FROM DIFFERENT FIELDS.

THE CHEAP PAPER ESCAPE.

The cheap paper bee-escape, described in GLEANINGS, Jan. 1, 1893. I find will not work when there is a lot of drones and very young bees in the supers. I am sorry for not discovering this fact sooner, especially since so many agricultural papers have copied the article. But you see I had very little early honey the past two seasons, and therefore none to take off until late, when every thing favored the escape, such as cool nights, etc. But I am glad to give you and the readers of GLEANINGS a plan that will clear supers of bees so quick that the average bee-keeper can afford (for the fun of it) to stand and watch them pop out and make a bee-line for home. The plan is, to place the supers to be cleared of bees on a bottom-board, with the entrance against that of the hive (cover up securely against robbers). Now for the escape: Stretch a light curtain across the entrance in such a manner that it will swing outward only. Probably the easiest way to accomplish this is to allow half an inch or so of the curtain to trail outward, or lie flat on the alighting-board.

To make this escape (those who have loose bottom-boards handy), nothing is required but a two-inch strip of very thin muslin, as long as the entrance, and a stick, or a stiff wire that will reach across for a roller.

Will the editor please take a few minutes' time and make one? Fasten it in front of the exit of a super filled with bees; place it up against, either in front or side of the entrance of the hive. You will have to wait only a few minutes when you will see a sight that will remind you of a lot of little pigs in a garden with a dog after them, and only one place to get out.

JOHN HANDEL.

Savanna, Ill., July 29.

CLEATED HIVE-COVERS, ETC.

Friend Root:—GLEANINGS came to hand the 10th. In regard to the honey-crop in this vicinity I will say that it is very spotted. Some apiaries will make nearly half a crop, while others seem to be just making a live of it. I don't think the average will be a quarter unless things take a very favorable turn, which is hardly possible at this stage of the game. My own bees will probably make half a crop.

In regard to the cleats on the hive-covers, I think the present way of making them is much better than the diagram published in GLEANINGS for July 1st. If the cleat is nailed solid—that is, in more than one place on each cleat, the board will not be left free, as at present, to expand and contract with the changes in the weather; consequently the board will crack and split. I make my covers and cleats out of redwood, and have no trouble from splitting. I fasten the cleats to the covers with one screw in each end, which is the usual way, I think.

In regard to the size of sections, p. 528, if Mr. John Kersteiner, and a few others, will only just keep quiet for a while, the whole swarm, from bee-man to buyer, will settle on the $4\frac{1}{2} \times 1\frac{1}{2}$ section; then we can have the whole lot, and every thing will be lovely. Bro. Kersteiner is very mathematical—too much so for my bees. If a section $12 \times 12 \times 4.5$ cm. will hold just a

pound of honey, I wish he would just go ahead and tell us how to prevent the bees putting a little more than a pound into the section during a good honey-flow; and, *vice versa*, during a scant flow of nectar. My bees are now putting 17 or 18 oz. of honey into the $4\frac{1}{2} \times 1\frac{1}{8}$ section; later they will put less than a pound into the sections. How can we help it? A. B. MELLEEN.
Acton, Cal., July 12.

CULLING OUT UNDESIRABLE QUEENS.

In kindness to those who can not afford to lose a good honey-flow by poor stock, I urge that GLEANINGS continue to insist upon my motto: Supersede any queen that will swarm out from under empty sections, and raise no daughters from her, provided the super is all right. To learn this, cost me some dollars in years gone by. This year I have a daughter of an imported queen to supersede (a magnificent queen) on account of contrariness in comb-building. Another daughter is a splendid comb-builder, but she does not finish her sections until a long time on the hive, and always leaves a few uncapped cells, with unfinished spots around the edges.

Another daughter of the same imported queen built but few burr-combs, even with the old saggy frames; finished her sections neatly all around the edges as she went along; swarmed once; left just one queen-cell behind her, went to work like tigers in the new hive, drawing out my brood foundation; worker-cells clear to the bottom-bar. I need not tell you I am taking eggs from that queen for all superseding. Of course, when I speak of the queen doing work I mean her bees, her household, her army, the same as Grant took Vicksburg.

Ingram, Pa. PHILLO S. DILWORTH.

FLAT COVERS WARP.

In a late issue of GLEANINGS you ask if the flat covers of the Dovetailed hive warp. They do in early spring, here. I have 20 of the first you made, and 40 you made the next year. Many of the end-cleats are cracked so that I will use them for bottom-boards, as they are unfit for covers now. Warping causes but little trouble during the summer months; but in the early spring it allows the heat to escape, and sometimes the robbers get in. As a remedy I would suggest that you use a cutter-head in grooving these end-cleats, cutting them smooth. Before nailing them, give the end of the cover-board and groove in the cleat a good coat of paint; this will keep the water from swelling the joints, which, in my opinion, is what cracks the end-cleats and weakens them, allowing the board to cup. If I use any more flat covers I will test this. E. F. QUIGLEY.

Unionville, Mo., July 27.

[Any one can, just before putting the cleats in the covers, paint the groove and the end of the cover. This, doubtless, would be quite an improvement in localities where there is trouble from warping.]

THE FERGUSON QUEEN-CAGE—HOW DO THE BEES GET TO IT?

I do not understand how the bees are to get into, or the queen get out of, Ferguson's cage, pictured on page 566. Please explain it. From the picture, I think it a tight wire box with cover. E. D. HOWELL.

New Hampton, N. Y., Aug. 1.

[We had not noticed, until friend Howell called our attention to it, that our engraver made a mistake in showing the Ferguson cage on page 566. The blocks A A should have come up flush with the wire cloth, and an open-

ing should have been made through the wire cloth at B. The space between the two blocks should then be filled with candy. The bees enter between the two points A A, and eat out the candy up as far as the perforated zinc C. Here they gain access to the queen. After the bees have become acquainted with her in small squads at a time, the candy will, in the mean time, have been eaten out, so the queen can pass between the sticks and escape from the cage.]

THE JENKINS CAGE FOR INTRODUCING.

We wish to call your attention to one thing. We have been using a little queen-cage made by J. M. Jenkins, Wetumpka, Ala., for an introducing-cage, for three seasons, and have never lost a queen with it. Can you account for it? We believe it is because the queen will not come out of this cage as readily after the candy is eaten out as she will most of the other cages in use. You know with the Benton cage, and almost all others, that, when the candy is eaten out, the bees are out. It is not so with this cage (the Dixie), with the hole in the wire screen. With this cage the candy is eaten out, and the bees enter the cage; but there is no danger of their hurting the queen while she is in the cage, and she can not find the hole in the center of the wire very easily, and she will remain in the cage so long as there is any danger. If that is not the secret, we do not know what it is; but we do know that, when we put queens in with this cage, we are just as sure to find them laying in five or six days as that we put them there. CLEVELAND BROS.

Decatur, Miss.

PUTTING IN STARTERS BY HAND.

I saw a novel way of putting starters in sections, described by Rambler, and I think I have a way that is as good, or better, for small fry, as one does not have to fit up any thing. Just place the sections on a table in the flat, groove side up, and cut starters the desired size, and place at the left hand. Take a piece of wood in the right hand, made as in diagram, and kept wet. Place a starter on one section, and press down with the paddle; then put a starter on No. 2, and press; go across them all in this manner. Then begin at the last one and fold up the section, placing in a super so the starter will hang down; and the weight of the wax, if the room is warm, will bring it into place. I find this very rapid, and it does not require a perfect cut of the edge of the starter, as it does when glued in. M. C. DIMICK.

Bowling Green, O., July 29.

THE TOMLINSON CLOSED-END-FRAME HIVE; QUESTIONS ANSWERED.

A. I. Root:—I feel like returning you many thanks for your notice of my "Ideal" hive in your Trade Notes. It would destroy, in a great measure, the utility of the hive to have the rods put in the other way—to press the frames together. To loosen the frames sidewise requires a good deal more room or loosening capacity than endwise. Only a very few turns of the nuts loosen the sides—say $\frac{1}{8}$, or, at most, $\frac{1}{4}$ of an inch; while, to remove the frames apart easily, requires $\frac{1}{2}$ to 1 inch or more. Wedges close the frames together much more rapidly than screws, and are equally efficient.

You do not see how the end-board is wedged up against the frames left in the hive after

contracting the brood-nest. Simply by wider wedges; or, if several frames are taken out, by sticks cut off the required length.

One of the chief advantages of compressing the brood-frames endwise is, that the frames may be perfectly even, so that the ends of the frames shall present on the inside of the brood-nest a surface as smooth as a board, allowing no projections for propolis. I think you are much mistaken in regard to the durability of the hive-cover joints. JULIUS TOMLINSON.

Allegan, Mich., July 22.

HONEY AND—CIRCUSES.

Basswood is in full bloom here, but I don't think the bees are doing as well on it as they did on white clover. We have got more honey this season than we got all together in the last three years; but if we do not get some rain soon we shall not get any more honey this year.

CIRCUSES.

Mr. Root, I am glad some one is not afraid to give an opinion of circuses. We went to one the other day. It was the Irwin Brothers' show. I wanted the children to see the menagerie. They had only a few animals; but, oh such wicked gambling that was going on in the side show! My heart ached as I looked on and saw young men and boys lose their hard-earned dollars trying to beat a man at his own game. Those gamblers took in hundreds of dollars in a few minutes. How I wish all of the people in this world could take GLEANINGS! You seem always to hit on the right subject. I don't know how many times we have opened our new GLEANINGS and found in the Home talks the same subject that we had just been talking on. It is really remarkable. MRS. F. T. HALL.

Barron, Wis.

BEEES ORNAMENTAL AS WELL AS USEFUL.

I thought, up to July 1, that keeping bees out here on the open prairie was a purely ornamental pastime. Since then I have had reason to change my mind, as every surplus box is full of honey gathered, I believe, from horsemint and a yellow nettle. I need an extractor badly, and would have ordered one, but the freight charges are enormous. However, I will get one early in the spring. I think by that time I shall have inaugurated a bee-fever around here, as it has already broken out. I live only sixty miles west of Mrs. Jennie Atchley, of Greenville.

J. HARRY WILSON.

Orphan's Home, Tex., July 28.

BEEES DYING FROM SPRAYING WHILE TREES WERE IN BLOOM.

My bees did finely, considering the loss by poisoning during apple-bloom, from spraying with Paris-green water by farmers across the White River, west of the city. I lost no colonies; but my best, that had the early morning sun, got very weak. Such as were more in the shade did not suffer much. For three days my garden was literally covered, every inch of it, with wriggling and dying bees. On Monday following, a big rain stopped it.

GEO. L. HOLLENBACH.

Noblesville, Ind., July 20.

[Spraying does little or no good if done on the full bloom. It should be done after the petals have fallen. Then there is no danger to the bees. Your neighbors need educating.]

WHAT SHALL WE DO WITH THE BARLEY IF WE STOP DRINKING BEER?

Bees are entirely idle for the past few days. The weather is very dry; vegetation is suffer-

ing badly. A good deal of the corn, and many potatoes, are drying up. We shall not get much fall honey if we do not get rain soon. The honey we got so far is of excellent quality, and I am well satisfied with the quantity I got of white honey so far.

I should like to ask A. I. Root what we should do with the large quantities of barley that are produced here if nobody would drink beer. No. 1 wheat at 48 cts. per bushel won't pay. Barley pays best here of any small grain, therefore we sow it. C. THEILMAN.

Theilmanton, Minn., July 27.

[Friend T., that is a good square question, and one that we have got to meet in a Christianlike and temperate way. I myself raise rye, as you know, on a small scale. Almost every season somebody asks me how I know that it is not used for making whisky. Well, as all I raise is sold for seed, I feel pretty sure that the product of my grounds is never used directly for making whisky. The people who buy of me, however, may sow it for the purpose of raising grain for a distillery; but my opinion is, that we are going too far when we undertake to circumscribe ourselves to that extent. Rye is used, at least to some extent, for bread. The crop is also largely raised to plow under; and rye straw is quite a commodity for various paper-mills. It may be that barley is used principally for making beer; but not altogether, for in California it is their great hay crop; and it is used largely for feed in the form of hulled barley. I would not make a business of raising rye or barley either, on purpose to supply a distillery; but with my present light on the subject I would raise either one of them, if it were convenient for me to do so, and sell the product to the grain-dealers for whatever they would pay. Some good Christian people of my acquaintance once complained because I bought ice of a saloon-keeper. Now, this saloon-keeper also had a farm, and raised potatoes. When I asked the question if I should refrain from buying potatoes of him because he was a saloon-keeper, they thought I ought not to buy even potatoes of him. I thought, and still think, that it was my duty to encourage him in every honest industry, whether it be putting up ice or raising potatoes. In other words, I certainly would not aid, either directly or indirectly, anything in the way of production or sales of intoxicating liquors; but at the same time I would take great pains to encourage the very people engaged in this traffic in obtaining a livelihood by some other means. Please remember that corn and even honey can be used, and are used, for making intoxicating liquors.]

THE LANGDON NON-SWARMER A FAILURE.

As you call for reports on the Langdon non-swarming device I send mine. Bees swarmed out in six days after putting on. I then hived the bees in a new hive, and put the boxes on the swarm. I then adjusted the device to two other hives, and it smothered about all of the bees in the two. I then tried it on two more and smothered them, and then concluded to quit. It seems that, when you have a very large lot of bees in a hive with the device on, and close the slide, the bees bank up at the inch hole where the cone escape is, and conclude they are fastened in, and then get up such a heat as to melt the combs down and all die in a pile. HENRY MARDEN.

Roodhouse, Ill., July 25.

[It would be possible to remedy the trouble from smothering, but perhaps not so easy to prevent the very things we want to prevent—swarms.]

Here is one report against the Langdon non-swarming attachment. It is non-swarming, sure. It runs the brood nearly all out of both hives, and does not increase the amount of bees or honey, so far as I can see.

Worcester, N. Y. W. H. MALLORY.

I adjusted one of the Langdon devices to guard colonies, and the one shut in smothered to death. The bees just covered the device so they could not get out. Every bee died.

Rodney, Iowa. C. J. BARBER.

AN INGENIOUS RECEPTACLE FOR GATHERING FRUIT.

Friend Root:—Your mention, on p. 616, of John Chinaman's expert way of carrying loads behind and before, so as to be self-balancing, calls to mind a way of gathering and carrying fruit which I learned in Florida, which I think, if not generally known, will prove a boon to some shoulder-blistered fruit-gatherers who still use the fruit-bag slung on the side, and its weight all borne by one shoulder, which is cut and blistered by the narrow strap.

Down there, for gathering oranges they use a sack made in the shape of a shirt—a long one—strong Osnaburg is the material. In the lower hem, which reaches below the knees when put on, a cord is inserted, with eyelet holes in front, for the ends of the cord or tie-string. The fruit-picker puts on the shirt over his other clothing, and, adjusting this bottom hem about his waist, draws the strings tight and ties, thus making a bag all around him, of commodious dimensions, into which he can rapidly pass the fruit, through the opening in front.

When loaded, his burden is distributed evenly around his body, the weight being borne by both shoulders, and, to some extent, by the back and waist; his equilibrium is still maintained, and he can descend the ladder, and, generally, handle himself with far greater ease than when using the lop-sided satchel plan, which not only hurts his shoulder but throws him out of plumb, and makes his movements awkward and clumsy. When emptying out his fruit the picker simply stoops over the box or basket and allows the fruit to roll out, breaking the fall with his hands.

It is easy to see, that not only is this way of carrying fruit the least trying to the workman, but it enables him also to carry more at every load, and he can gather fruit faster, it is claimed, than by any other plan. C. P. COFFIN.

Pontotoc, Miss., Aug. 5.

[Friend C., we are very much obliged indeed for your suggestion. The only trouble just now with us, around here, is to find the fruit to gather. A very small bag would hold pretty much all we get on any one tree.]

HUMBUGS AND SWINDLES.

THE AMERICAN COFFEE-BERRY.

Mr Root:—What is your opinion of the American coffee-berries that are being advertised? Do you think that they will become very popular among the farming class of people? J. MCQUEEN.

Baltic, Ohio, July 24.

As the above is a little out of our line, we forwarded it to the editors of the *Rural New-Yorker*, who make the following reply:

This "American coffee-berry" seems to be the Japanese Soy bean, which has been tested at several of our Experiment Stations. The bean, when

ground and roasted, makes a fair substitute for coffee, and is used for this purpose quite a little in parts of Indiana and Illinois. The "American" part of it is the cheek of the "introducer," who calls it a new thing and wants to charge 10 times what it is worth. The Georgia Experiment Station has sent out a bulletin describing the matter.

H. W. COLLINGWOOD, *Editor Rural New-Yorker*.

Friend M., will you please tell us where you saw the American coffee-berry advertised? and, if you can, forward this to the editors accepting such advertisements. We had heard of it before, but wanted to be sure we were right.

REPORTS ENCOURAGING.

Bees are just booming. This is the best season in five years. T. DOOLEY.

Sweet Springs, W. Va., July 21.

I shall have over 3000 lbs. of honey from 45 colonies, many of them in a weak condition in the spring. B. W. PECK.

Richmond, O., July 31.

Bees are just "humpin'" themselves. Some colonies have made me over 100 lbs. each, and going on the fourth set of sections.

Alexandria, Ind.

E. E. EDWARDS.

We will give the correct weight of the number of pounds of honey one swarm gathered. The swarm was hived July 15, on empty combs from the extractor, and we set it on the scales. Honey from white clover—July 16, stored 14½ lbs.; July 17, stored 12 lbs.; July 18, stored 9 lbs., all from Italian bees and queens reared in our apiary. COLE & LOWERS.

Latona, Wash., July 19.

20 TONS OF HONEY FROM 176 COLONIES.

As you asked for reports, I will give you ours up to date. We have made 20 tons of honey from 176 colonies. They were weak in spring; but by giving close attention we got them in fine condition for the first honey-flow. The honey here is of a very fine quality this season, as the bees could get it more easily from the sage than from any other flower. The apiarists of this locality are holding their crop at 5½ cents. EMERSON BROS.

Santa Ana, Cal., July 18.

THE BEST OF SUCCESS.

I am having the best of success. I am still in the Smilery. I have 27 stands, 20 of which are on Hoffman frames, so you see I am making haste toward an apiary. Your suggestion of giving new swarms frames of brood and honey is just perfection. I owe my entire success to this and the A B C. I am much elated now; but by spring I may be in Blasted Hopes, and may feel just like the fellow you pictured sitting on an inverted bee-gum. But I hope I may never look like him. J. J. TEMPLE.

Lewisville, Tex., July 20.

REPORTS DISCOURAGING.

No honey from my 19 hives this season.

Dardenne, Mo.

WILLIE C. WILSON.

Bees did scarcely any thing last season, and they are the same this. Drouth was partly the cause. About half died last winter, caused by lack of stores, cold weather, and candied honey. For two or three years the honey has been can-

dying in the combs as soon as gathered—at least, a considerable part of it.

Nokesville, Va., July 21. W. T. ALLEN.

POOR HONEY YEAR IN NEBRASKA.

The honey crop with us so far has been a flat failure, with no indications of a fall flow. White clover, the chief source of honey, was practically all killed out last spring, and, owing to the excessively dry weather, other honey-producing plants have not made a very rapid growth. To add to the drouth, the grasshoppers are plentiful, and are doing considerable damage. But we have no cause for complaint, for we have had good honey crops the past two seasons, and will prepare for one next season.

Crete, Neb., July 24. F. M. TROUT.

NOT A GOOD HONEY YEAR FOR MISSOURI.

Friend Root:—In *Stray Straws*, July 15, Dr. Miller says: "The 'great clover year' will be the way 1893 will be referred to in the future." I wish it were true on this side of the Big Muddy. I also see 16 encouraging reports, in *GLEANINGS*. Would not a very blue report set off those bright ones, and make them look brighter? This is the poorest season since 1887. That year I did not get a spoonful of honey from 12 colonies of bees, spring count. Last year (1892) was very poor, getting only about one pound from a hive, on an average. This year I have taken off six sections, and there are not more than 15 or 20 more that are nearly full. Now the bees are getting almost nothing. There was no nectar in the white clover. What little basswood there is here yielded no honey. The sumac was also about dry. This is what you call "blasted hopes," I suppose. I have never known any surplus honey after this time of the year, gathered here. That Crane smoker is a dandy.

R. D. BECK.

Niangua, Mo., July 28.

NOTES OF TRAVEL.

ON THE WHEEL.

On page 612 of our last issue you will notice an invitation from C. W. Frank to go and see his 4500 celery-plants, etc. It was not very many days after said invitation before I presented myself, as Fairlawn is only about 17 miles east of Medina. Friend Frank is a young man only 24 years old. He lives with his father and mother. I found him putting out celery-plants in the garden, for they had just been having a tremendous rain. The garden is a rich sandy loam; and as I kicked into it with my foot I concluded it had been treated most liberally with manure for, very likely, a good many years back. Just as soon as I told him who I was, he put his plants in a shady place and marched me into the house, and introduced me to his folks. There was a mischievous twinkle in his eye as he made the announcement, "Here is Mr. A. I. 'Gleanings,'" and then there was quite a laugh all round. Right in front of the door is a huge wooden pump, and it brings up just the kind of soft spring water that Summit Co. is noted for. It was in the middle of a hot day; and, didn't I just enjoy taking drink after drink of that beautiful, clear, delicious soft water! In a minute or two my eye caught glimpses of some pails of huckleberries. They were unusually large and fine; and when I found that they grew on their own land, and that the family had made some attempts at cultivation, I tell you I felt glad. They had been doing just what I had thought

of—cutting out all other forms of vegetation, and letting the berries have the swamp all by themselves. The first they carried into the Akron market, only three miles from their place, brought, if I remember correctly, 18 cents per quart. I wanted to go straight to the huckleberry-swamp, and see them grow; but Mr. Frank laughingly remarked that there were lots of other things I must see first—notably, the 4500 celery-plants. They were in a rich garden-spot, such as I have described, and partly shaded by trees. A large quantity of manure was put on to the ground and worked in; then the plants were put out just 7 inches apart. They were White Plume and Self-blanching. Sure enough, they stood, some of them, nearly two feet high, and the ground was densely covered. Boards a foot wide were set up along the outside of the bed. Some of the plants were large enough for table use, but they were not sufficiently bleached as yet. In fact, they were rather tall and spindling, and hardly thick enough at the bottom to fill up the space so as to bleach fairly. After he and I had looked it over and talked it over, we both concluded he had hardly given sufficient water during the past drouth; and I am afraid the ground was hardly rich enough. To grow celery in this way the ground should be almost half manure; and my opinion is, that it ought to be worked in certainly a foot deep, and may be 18 inches would be better. Commercial fertilizers may be a help, but I am sure we want stable manure down in the ground for them to fall back on. A windmill over their barn furnishes water; but just then somebody had left the valve open, and the tank was empty. Besides, the windmill was out of order, and did not stand very square in the wind, as it ought to do. I want to digress enough to say that I have never yet seen a windmill that would stand before the wind and govern itself under all circumstances as I think a windmill can be made to do. In fact, a great part of them, that we see throughout the country do only about half the work that they ought to do, and from that down to a quarter and even nothing at all. Before I came away, however, there was an abundance of water, and I saw just how they used it. To give all the water with a hose and sprinkler is, however, considerable work, and such great quantities are needed for such a method of growing celery that I am inclined to think that sub-irrigation is going to be the thing. This is, simply laying tiles on a dead level right through the bed. They should be from a foot to 18 inches below the surface. Another celery-grower, of whom I am going to speak later on, said that, if he could have his way, he would have these irrigating tiles only three feet apart. This, however, was for plant-beds for raising celery-plants.

After the celery, we visited his acre of cantaloupes. Some were already as large as goose-eggs, and the show was very nice indeed. A part of his first planting came up poorly; in fact, I am inclined to think that melons and squashes came up poorly almost everywhere when we had those heavy rains in May. Part of the field was very nicely cleaned out; but our young friend had to apologize a little for the weeds in the remaining part.

Then we visited a field of Hubbard squashes; and he showed me where he put in the fertilizer. Yes, there was a larger growth of vines on those special rows, but not enough so I should have noticed it had he not told me where the fertilizer was put on and where it was not. Another thing, in the city of Akron he says he can get stable manure, great big loads, for 25 cents a load; and during the months of July and August, when it accumulates, and nobody

seems to want it very much, he says he can find several places where he can have it for taking it out of the way. He is only three miles from the city. Now, with this condition of affairs, I am quite sure that the money he paid for the fertilizers would have gone ever so much further if paid out for manure and a team to haul it.

During the recent heavy rain, a great amount of his richest and most fertile soil, together with the fertilizers and stable manure, had washed down into the swamp; but this time friend F. had the advantage of most of us: for the good ground and fertility had gone right around the huckleberry-bushes instead of going to waste. This surface-washing is getting to be a serious matter, and something must be done to stop it: at the same time, if we can have some sort of crop to catch it before it goes into our creeks and rivers we shall be heading off loss in another way. This huckleberry-swamp has no outlet. The soil is so porous that the water ordinarily gets away before it rises up very high. Such swamps are scattered all over our State, and one can imagine something of the fertility they contain by the enormous growth of weeds, swamp-grass, etc. I tell you, if I had some huckleberry-bushes under cultivation, so situated that they would catch and save the fertility during a time of tremendous rains, I should feel happy. If I am correct, the huckleberries would stand being covered with water for quite a long period, and not be injured. When a boy, I used to gather the berries when wading in water nearly a foot deep. No matter how severe the drouth, there is but little danger of losing a crop of huckleberries on this account.

Toward evening my good friend Frank took his smart horse "Rush" (I think that was his name), and we went to visit my cousin, Mr. Atwood, whom I mentioned on page 485. Oh what a sight met our gaze! Mr. A. has been busily at work ever since my last visit. Twenty-five acres of that swamp land have been brought into subjection, and the beautiful rows of celery are not only as straight as you can draw a string, but so even and regular in size and color that each row—in fact, each *plant*—seems to be a perfect counterpart of its neighbor. As we passed along the road and looked up first one row and then another without getting a glimpse of even a bit of "pusley" I really felt like giving a whoop to express my satisfaction. When we came to where another man's land commenced, where he had started into celery also, the contrast was almost painful. Crooked rows, plants missing, weeds and disorder, made one realize that he was not in a fairy land after all. The boy told us that Mr. A. was not at home. He said he had gone over to a neighbor's after a jug of water. You remember my exhortations to friend A. Well, I asked the boy if he knew whether there were any nice young ladies living over where friend A. had gone. We went over, and brought him back with his jug—that is, after he told us he was not particularly engaged for the evening. He is quite a scholar as well as gardener; and after I had teased him some he commenced with a solemn air:

"Mr. Root, do you remember a certain French general who once said, when asked why he did not pay more attention to the ladies, that his affections, his heart, and his soul, were bound up in France? For France he was going to live, and for France he was going to die, therefore France was his mistress and his 'all in all'."

"But, friend A., I do not see the point. Where is *your* France?"

With a dramatic air he waved his hand over

the beautiful lines of green as they stretched out in the distance in the moonlight, and said something like this:

"For the present, making a success and a thing of beauty of these vast acres of swamp-land takes all of my time and energies and affections."

"But you have succeeded; you have 'got there' already," interrupted friend Frank. Whereupon the boss of the celery-farm shook his head sadly, and then I added:

"No, perhaps you have not succeeded—at least, as well as you may succeed in time to come. But, my dear sir, it will be a long time before I am convinced that a good man will not succeed quicker, and his success be greater, in any honest, praiseworthy undertaking, with a good *woman* to help."

The plant-beds that so delighted my eyes on my former visit were now about vacated, the contents having been so beautifully spread over those wide acres.

"But, look here, friend A., how does it come that, during this severe drouth, every thing looks so bright and green, and your swamp-ground is such a beautiful jetty black? Surely you have not been irrigating this whole 25 acres, have you?"

My young friend right here suggested that he had got a new plan of irrigating, and then he pointed to the water shining in the moonlight in one of the ditches right at our feet. I started.

"Why, see here, old fellow; how does that water come way up there, within a foot of the top of the ground?"

There was a twinkle in the eye of the proprietor as he replied:

"Why, I put it there. After that dredging-machine that you heard panting and blowing off through the woods got up here and let the water out of my way, I found there was danger that I should soon want the water that I was so anxious to get rid of. So I found a place in the creek high enough up where I could let the water in on my grounds, and that is the way I have kept things growing at such a rate."

"But you told me there was a little fall from one side of the swamp to the other—enough so the water would run off in your tiles. If this is true, how do you keep it at the right height here without having it come up down there by the road so as to give your plants too much water?"

"Well, we did have just that obstacle to meet, and we met it very simply. We fix a piece of heavy tin on the end of a board; then we dig down so we can see the tiles, and push the tin down through a joint so as to hold the water back. The dirt can then be thrown in back around the handle sticking up; and by raising or lowering this you can control the flow of the water."

There, my friends, you have an ideal celery-swamp. Right in the same neighborhood I found a market-gardener, Mr. Chas. C. Miller, who made me open my eyes and stare at his early White Plume celery, and his beets and radishes that he was raising for the Akron market; and as he said his boys were going to get up at four o'clock in the morning, to gather, wash, and load the stuff for an early start to the city, I decided to stay all night, so as to be around in the morning to see them work. I left home in the middle of a hot day, and therefore came away in my shirt-sleeves. I would have taken my coat along, but there was a heavy wind right against me, and the coat would have been a hindrance any way I could fix it; therefore I did not take any. When I went away in the evening with friend Frank he kindly loaned me a coat. But the weather turned so cool by morning, especially in the

low land near the celery-ground, that I was very glad to borrow an *overcoat* also; so you can imagine what a nuisance I am likely to be if I should ever happen to come around *your* home on my wheel. I will tell you about that early morning visit next time.

OURSELVES AND OUR NEIGHBORS.

He that is not against us is on our part.—MARK 9:40.

Friend Root:—I had not any intention to interfere with your discussions on religion, but I can not let pass without protest your assertion that men who do not frequent church regularly are more ready to cheat than good Christians. Since we have been in the foundation business, the only two workers that we have had to discharge, on account of dishonesty, were regular church-members. Most of our workmen do not go to church at all, yet I dare you to find more honest men. Besides, if you desire it, I will name two ministers of the gospel who have tried to cheat us, and I will furnish the proof of it.

It is the usual practice amongst the preachers to calumniate skeptics. This habit has induced free-thinkers to retaliate; and now you can buy, for 25 cents, from the *Investigator*, of Boston, a small book in which about 1700 crimes of preachers are shown. I have never seen that book; but you can get it, and prosecute the publishers if you can prove that some of these crimes, committed within a few years, are invented slanders.

In answer to Mr. Kaufman, who wrote that a man must act the way he is built, you borrow the idea of Mr. W. P. Root that such views would be cheered and accepted throughout all the haunts of vice. Although I think that Mr. Kaufman was too positive in his assertion, yet I will say that the principle of his idea is accepted by all the anthropologists who have thoroughly studied the question.

As soon as the Europeans took possession of America, 400 years ago, they tried to civilize the Indians. Continued attempts were made also to civilize the savages of Australia, of Ceylon, of South Africa, etc. Why did they not succeed? Because these savages act the way they are built. Every man is endowed with different desires and aptitudes. England produced Darwin; United States, Edison; France, Pasteur. You could not make an Edison of a Darwin, nor a Pasteur of an Edison.

You imagine you feel Satan teasing you without intermission. As I have never felt him around me I do not believe in his existence; and, of course, I think that it is the way you are built which gives you this imagination. Furthermore, you were born especially a business man in the full acceptance of the word; *dominant dominant* (giving to receive), as we say in France; and not only your success in business, but your ideas on religion prove it.

You wrote, page 568, "Dear friends, we have a plain and clear Bible promise that we shall receive tenfold more than we give up, here in this present world, and eternal life beyond;" and, page 569: "The Master answers that every one who has followed him, every one who has forsaken houses or brethren, etc., shall receive a hundred-fold, and shall inherit everlasting life," etc. So, unconsciously, you consider religion mainly from a business standpoint—giving something in exchange for more.

Whip or candy? All the Christian religion is expressed in these three words; yet I think mankind is old enough not to be dealt with as with our tame animals, and that it would be better to develop conscience in our children than to use the fear of hell and the hope of heaven.

My parents never mixed their doctrine of good behavior with the hereafter, of which we know nothing. They used to say, "Remember that your duty is to act according to your conscience; that 'bonne renommée vaut mieux que ceinture dorée' (a good name is worth more than a golden belt), and that you can not get a good name unless you behave well and act honestly and friendly toward all. My father had seven children. They have never given him the smallest cause to regret his method of teaching them morality independently of religion.

I have used the same means with my children, with the same results.

We free-thinkers do not work in view of reward, but we act for the love of what is right. If we make something wrong we do not fear hell; but our conscience grieves us till we have tried to make amends. If we help some poor man out of a sad position, we do not do it to go to heaven, but we find our reward here in the satisfaction of having acted right. We do not care for the hereafter, of which we know nothing.

To the question of Mr. Randall, "Who made Satan?" you answered; "God made him good, but he made himself bad." I desire to complete the question: "When God made a good Satan, did he know that this good Satan would turn bad?"

"Yes, certainly, since God knows every thing!"

Then, according to your creed, God had foreseen that Adam would disobey, and that nine-tenths of mankind would be damned, notwithstanding the sacrifice of his Son; and you believe that God, who foresaw all these evils, created Satan and Adam all the same, and without remorse.

You may retort that God made us free agents. I can not accept this shift as an answer. My question is: "Before creating Satan and Adam, did God know that the nine-tenths of mankind would be damned?"

If you can give an answer which proves that the God of the Christians acted right in creating men who did not ask to be born, while he did know beforehand that most of these people would suffer eternally by their own fault—if you can prove that such an act was just, you will convert millions of skeptics and free-thinkers.

I have laid down this question to scores of priests and ministers. Nearly all of them turned their back directly. A few answered that we have not the right of questioning what God did. But I do not question what God did. I question only what you Christians say that he did. Such a belief as yours is not only an insult to God, but a monstrous slander, which has diverted from religion all those who did not fear to consider it squarely; for, if your religion is true, God is worse than all the monsters which can be imagined.

I have noticed that Christians fancy that it is on account of their wickedness that free-thinkers do not believe in the tenets of Christianity, while it is just the reverse; for every honest man who will dare to consider the monstrous character attributed to God by religion will reject it, to look for something more in accordance with his ideas of kindness and justice.

I hope that, since you try to answer all those who are really seeking the truth (page 569), you will publish my letter, especially as I write in answer to your slandering us free-thinkers.

Hamilton, Ill.

CHAS. DADANT.

Dear friend D., it gives me a feeling of pain to think that you and I should even *seem* to be taking opposite sides, especially in public, as we stand before the world, when the truth is, I am sure, that we both love honesty, purity, temperance, and virtue; or, in other words, that we are both seeking righteousness. You certainly misunderstand me, and perhaps I misunderstand you. Yes, I have heard of that book that tells of the crimes committed by ministers. You say we calumniate the skeptics. I certainly did not mean to do so; and if it is true, and that skeptics also calumniate us, then there is a very bad state of affairs indeed. Jesus said, "Love ye your enemies, and do good to them that hate you." Now, suppose that Christian people should get out a book and publish the crimes committed by free-thinkers—would anybody buy it? Why, I should be ashamed to think that either Christian people or free-thinkers would buy such a book. I certainly would not read it. If I knew exactly what it was, I would burn it up as soon as I could get hold of it. In past ages it may have been necessary to build up a creed by pitching into other people; but surely not now in this age of the world. If I did pitch into free-thinkers, or seem to do so, I humbly beg pardon.

First, you say I have said, "Men who do not

frequent church regularly are more ready to cheat than good Christians." I did not mean to say exactly that, friend D. What I did say was this: "If I wanted a good man for an important place, and wanted somebody I could trust when I was not in sight at all, I should, other things being equal, greatly prefer a man who attends church regularly, and who takes some part in the Sunday-school, weekly prayer-meetings," etc. You see, I was giving my own experience. If your experience is so different from mine, I am sorry. In the closing words of your first paragraph are the words, "good Christians." Friend D., is it not true that the whole difference between you and me may be summed up in this? You consider Christians hypocrites. I believe them to be honest in their profession. The good Christian stands before the world and stands before men taking a sacred obligation to be honest and pure and temperate, etc. You pay me a great compliment by calling me a business Christian. I do believe that Christianity should be a *business*. A Christian man is like a bank. He stands before the world prepared to live up to his profession. A bank stands before the world agreeing to make good its promises to pay, etc. When the bank fails to pay hard cash, according to the promise, it fails, and becomes a by-word and a reproach. When the Christian lets Satan lead him astray by dishonesty and impurity or intemperance, he becomes a reproach and a disgrace to the cause. There are certainly some good men among Christians. If they are *all* hypocrites, the state of affairs would be like a nation where the money was *all* counterfeit.

I wish you would give me the names of the two young men who were discharged on account of dishonesty, and were regular members of the church; or, better still, just lend them this journal, and tell them to write me an explanation. Please excuse me, friend D., if I can not help thinking that there is some misunderstanding, or that you are a little too hard on them. I am *exceedingly* glad that the rest of your men are honest, even if they do not go to church. Yes, I do desire you to name the two ministers of the gospel, but do not do it in public. Give me their names privately, or, as I said before, show them this journal, to remind them of what a serious and grave thing it is to dishonor, by their business methods, the sacred cause to which they have given their lives.* Ministers are no doubt sometimes slandered; but I myself do not believe they are very often slandered unless they are at least somewhat to blame. If one should make a business of hunting up all the ministers of the United States who have yielded to temptation, and denied their Savior, as even Peter did, no doubt it would make a good-sized book; but remember, dear friend, our country is a large one. There are three or four ministers in every little town, besides many more scattered throughout all the rural districts. They are sprinkled like salt throughout all this vast wide country. You know Christians have been called the salt of the earth; and my experience has made me think they are really the salt of the earth, notwithstanding these exceptional cases you have mentioned. Ministers are human. A good many of them are poorly paid, and some of them, I am sorry to say, ought never to have been in the ministry. Unprincipled men of education and ability frequently take up the ministry for selfish ends. It would be strange if some did not. In this case they are not Christians at all, but simply *hypocrites*. Pretty soon they are found out, and they give up their profession, or they are put out of it, and go back to where they belong. This book you

mention would, no doubt, contain the names of all of these. Why, the temptation is tremendous to manage to get into the pulpit in order to further some scheme to defraud. I knew of a "patent-right man" who called himself a minister, and actually preached a pretty fair sermon in one of our churches. He stayed here several weeks, and accordingly won the confidence of the people; and when he had got quite a lot of money he "lit out" for a new field. Such cases will, of course, go into that book. Then there are now and then instances of where a good man—a man who has, perhaps, preached faithfully for, may be, several years. Once in a great while we find such a man who, in an unguarded moment, yields to temptation. Down he goes, shaking community, filling the papers with scandal, dishonoring the cause of Christianity, and spoiling the faith of, perhaps, good people as well as bad. But when we consider the number of ministers of the gospel there are in the United States, I think the 1700 crimes you say are mentioned in that book do not make a big percentage, after all. But how does it render the teachings of Christ obnoxious to you, even if these men *were* false? You should consider the *men* and not the *gospel*. They were not bad *because* the gospel taught them to be so, but *in spite* of it.

Friend D., please remember that I have for years visited, talked with, and got acquainted with all the inmates of our county jail. More than that, I have visited prisons in other places in my travels. I have made this matter of crime in our land a deep study. When I spoke about a man *acting* the way he is "built," I had the inmates of our jails in mind, and I was thinking of the many times new criminals try to excuse themselves by saying they could not help it. An intemperate man tells me that his father drank before him, therefore he inherited an appetite that he can not resist. He is *built* that way, therefore he is not to blame; and criminals excuse themselves for all sorts of crimes in that same way. Now, the Christian religion teaches us, as you are well aware, that, even though a man *has* inherited appetites and passions, there is help for him. He can be *reconstructed*, *emancipated*, "built over" again, and may God be *praised* that this is indeed true. Why, old friend, you need not be surprised to see me full of energy and enthusiasm and faith in

*Most of our readers are already aware that we have for years sent goods right along to ministers without pay, and without even consulting Dun or Bradstreet. All we want to know is, that he is a minister of the gospel, and preaching regularly to a parish of people. Sometimes the clerks remonstrate; but I tell them to keep on until we find a minister who does not pay his debts. This has been our custom for years, and we have not lost any thing yet. A few days ago we had an order for celery-plants. Our customer said that, if we had a certain kind he wanted, we might send them along also C. O. D. "No, no," said I; "do not send them C. O. D. Don't you see he is a minister?" But the clerk objected, saying, "But he says we are to send them C. O. D., and he will be quite willing to take them in that way." But I objected again. "It will cost him some money extra to have them sent C. O. D., and we certainly do not wish to put a minister of the gospel to needless expense. He will surely pay for whatever he orders."

During the years that have passed since this has been our custom I have been a *few* times obliged to write to them that, if they failed to make good their promises, they would be the first to break the fair record that their calling has so far given us; and as ministers, like other people, are often behindhand, and have sickness, we have sometimes been obliged to wait on them. Now, I can not tell you how this record would compare with that of the free-thinkers; but I should be very glad indeed to know that this latter class are *also* prompt and upright in all business deals.

being built over again, for *I* have been so built over, and emancipated from what would have been despair and ruin. Others have been emancipated and saved under my own eye—I speak it reverently—through the results of my own labors and teachings.

Now, I do not mean by the above that this being "built over," or "born again," as the Bible teaches, would transform an Edison into a Darwin or *vice versa*. These *natural* gifts are in a different line. The emancipation from sin is a spiritual work. When any one feels himself hopeless against these evil impulses then I can say to him confidently that there is help, hope, and a refuge. The gospel is designed to transform an enemy of society into a friend of society; and that transformation renders all other human progress more easy and more probable. This seems to be recognized by even the railroad corporations—the most unsentimental and conservative class we can find; for a recent number of the *Scientific American* says that the Railroad branch of the Young Men's Christian Association receives upward of \$100,000 a year from the railroads in order that their hands may be drawn from the saloons and gambling dens, into such associations as make the best men for railroad purposes. The railroad companies are just now turning off men by the thousands; but the Cleveland paper said last night that these same companies were making every effort to retain the "best" men; and I feel very sure that, aside from the mechanical skill of these men, a strong preference is invariably shown for those whose lives are most in accord with Christian morality—sobriety, and a general air of respectability. But I am aware that you will put as high an estimate on such virtues as anybody, and claim that such principles can be maintained *outside* of religious belief. Granting that a few exceptions seem to prove your assertion, when we come to take humanity as it is all over the nation the best reply I can make is to quote a few words from the Farewell Address of George Washington. If his knowledge of men was not wide enough to make us thoughtful in what he says, the case seems almost helpless. Please read this, written just at the close of the most bloody revolution in history—one that rent your own native land from center to circumference:

"Of all the dispositions and habits which lead to political prosperity, religion and morality are indispensable supports. In vain would that man claim the tribute of patriotism, who should labor to subvert these great pillars of human happiness, these firmest props of the duties of men and citizens. The mere politician, equally with the pious man, ought to respect and cherish them. A volume could not trace all their connections with private and public felicity. Let it simply be asked, Where is the security for property, for reputation, for life, if the sense of religious obligation desert the oaths which are the instruments of investigation in the courts of justice? And let us with caution indulge the supposition that morality can be maintained without religion. Whatever may be conceded to the influence of refined education on minds of peculiar structure, reason and experience both forbid us to expect that national morality can prevail in exclusion of religious principle."

I am glad to hear you say that friend Kaufman was too positive. I am really afraid your anthropologists have not investigated Christianity. They have simply put man on the dissecting-board, and treated him as if he were a mere animal. The matter of *soul* has been entirely overlooked by them.

In the issue before this I told you what John

Williams did in the islands of the South Sea, where they swarmed with cannibals; and we have right here among us educated and talented people from among the Indians, the colored people, the Chinese; and, in fact, since the Endeavor society has made such wonderful strides, they are educating and bringing to the front scholars from every nation and every tribe and every clime. Mr. Calvert, with whom you are acquainted, attended the great Endeavor meeting, and could tell you wonderful stories of success attending the attempts to civilize the savages of the world. I grant you that it is a pretty big task to take a savage from his native wilds, and wean him from heathenism in a few short years. In my trip through the West I visited the Indian schools, and I inquired carefully into the discouraging features in the attempt to educate them. I know a great many people give it up, and say they are not worth the time and pains and money that have been expended on them; and I feel ashamed of some professing Christians who talk and act in just that way. You are quite right in saying that Darwin could not do Edison's work, and Edison could not do Darwin's. God in his wisdom has given us particular fields to labor in. We have all been called to some appointed work, and no doubt you are right in thinking that God has called upon me to preach and teach, in season and out of season, that there *is* such a being in existence as Satan, and that he *does* go about as a roaring lion, seeking whom he may devour.

Now, my good friend, please excuse me for taking up your assertion, "I have never felt him around me." Surely *you*, like the rest of us, have evil impulses. Did you never get vexed when, in thinking about it afterward, you felt bad about it? Did you never feel the "swear words" coming up when it seemed as if you would have to shut your teeth to keep the words back? I take it for granted that you do not swear, for a little further on you acknowledge, or, at least, I take it so, the existence of God. Any man who believes in God as the ruler and manager of the universe would certainly be untrue to himself and to his God if he spoke lightly or disrespectfully of this great ruler, or if he allowed himself to take his holy name on his lips when he was angry or provoked. Do you never feel a tremendous inclination or desire to do things which you ought not to do? Have you had no experience of the wonderful attractions there are in the racing or gambling mania? Have selfish impulses never prompted *you* to be unfair toward your fellow-men—that is, if you listened to such impulses? In short, has it never cost you a struggle to put down selfish and evil feelings, and to encourage generous and good ones?

Pardon me for the illustration I am going to use now. It may not apply to you at all. I am sure I do not know you well enough in your home relations and in your own neighborhood to have any thing to say about it. The illustration is this: Once, when I was a boy, in visiting some relatives I found a little boat tied up by the side of a river which ran near by. Without saying a word to anybody I pushed off into the stream. Without thinking much about it I thought I would go *downstream* first. There was not a bit of trouble, and no exertion was needed on my part to have a most delightful ride. In fact, I said to myself several times, "If boat-riding on a river is so delightful as this, I certainly am not going to live much longer without having more of it." By and by, however, I thought it would be prudent to see how much work it was to get back. I shall never forget the tussle I had to get back to the landing-place, nor the huge resolve I made as,

dripping with sweat, and worn out with the unusual exertion, I tremblingly tied my boat where I found it. The obstacles and resistances came only when I tried to row upstream instead of floating down with the current. Well, there was a time in my life when I was ready to say, as you do, that I had no reason for believing in Satan at all. I had seen no evidence of such a being, for I was going rapidly downstream, unmindful of the cautions and warnings of good Christian friends around me. After that eventful time, however, when I turned about to retrace my steps, and with a resolve to fight against the current of sin and evil, then I met resistance, and I meet it every day.

Only last week word was brought to me that a man was most cruelly beating and misusing a horse because it would not work. The horse was blind in one eye, and had a defect in one of its feet that would make it hopelessly lame for ever. Nearly everybody around there said it was not their affair, and they did not like to meddle with the man in question. It was a good deal easier to go *downstream* with the current. Now, my obligation as a Christian demanded that I should leave my business, go several miles and look the thing up, and take the part of the poor dumb beast. I too dreaded to stir up ill feeling and get myself into a quarrel; but the prospect is, I shall have considerable "rowing upstream" before I get through with it. The Humane Society, however, and other good people, will very likely give me a lift; but I *might* have gone on sailing downstream with the greater part of the rest of the world, and not got any glimpse of Satan at all, much less having a square hand-to-hand fight with him.

You speak a little further along about conscience. Good! I was very glad to see that. You believe in a conscience, and you believe in God who implanted this conscience within us as a monitor and a guide. Why, you and I are not far away from each other, even if we do call things by different names.

Now just a word about that expression of yours, "whip and candy." This thing is thrown up to us a good many times, and yet I am sure we think nearly alike about it. Now, would you not teach young people that there is a reward for doing right? Would you not say that *honesty* is the *best* policy? and yet this homely old proverb is a selfish one. People the world over (let alone children) are continually getting the idea into their heads that they can get along *faster*, and accomplish *more*, by telling *lies* and *stealing*, than they can by telling the truth and *working* for what they want. Every little while some young man (or old one) gets an idea that the ordinary methods of acquiring property are too slow or humdrum, or they want something with more excitement about it. Our teachers and our preachers—our good men and our good women—almost continually urge and exhort such to the idea that there is more *happiness* and more *money* in sticking to the steady duties of life, and in making their money in the orthodox way. A great part of our people are every little while getting crazed by the gambling mania. They think they can get rich faster by buying lottery tickets than by working on the farm. What can we do but to hold up both whip and candy, as you term it? Every thing we do is for some anticipated good, or from a fear of evil if we do not do it. We are continually grasping for a gain of some kind, or fleeing from evil of some kind. There can be no movement of the will aside from these two motives—one positive and one negative. You doubtless remember N. C. Mitchell, a talented lawyer and a man of great

ability—in fact, once the editor of a prominent bee-journal. This man put out circulars, established companies, and did a great amount of work, and took a great deal of pains in order that he might get money for which he never rendered any equivalent. Father Langstroth, in commenting in regard to Mitchell's career, said that, if the man had expended the same amount of energy and zeal in some honest undertaking, he might have been well off. He worked hard, and yet probably received nothing, and ruined his reputation and good name besides. Father Langstroth pointed out the fact that it did not pay, and that it really paid better to be honest than dishonest. Why, friend D., if you could convince the criminal class of this, there would no longer be any crime. Now, this other line of teaching is good and right also. We should be honest and pure because it is our *duty* to be so, whether it pays or not. Sometimes it costs us a big lot—yes, a big lot of *money*—to be strictly honest; but we should be strictly honest, all the same; and it is in this line that the scripture text comes in. When one tells the truth, even though it costs thousands of dollars to do so, he shall, in the course of time, get his thousands of dollars back a hundredfold; perhaps not in money, for money does not necessarily make people happy, but often quite the contrary; but the Bible promise is, as I understand it, that one who loses, for the sake of duty or honesty, will in the end be a hundred *times* better off, in the *best sense* of the word, than if he had sacrificed truth and honor for the sake of gain. Now, you and I both agree exactly in this, do we not, friend D.?

You say you do not fear hell as a consequence of doing wrong. I believe that the latest teachings of theologians is to the effect that heaven may commence here on earth—in fact, *does* commence here; and in the same line I believe that *hell* very often commences here on earth, if, in fact, it does not always do so. Taking it in this light, you and I pretty nearly agree again. If we steal we have an uncomfortable conscience, and that is punishment. Furthermore, if we are *successful* in our stealing it opens the way for more work of the same kind; for a thief never stops till he gets caught; therefore his troubles multiply upon him, and he commences very soon to reap that which he has sown. You speak of the satisfaction of having acted right. Why, that is a part of the reward that a Christian is promised; and, in fact, that satisfaction and peace of mind is what we call *God's blessing*. You say you do not care for the hereafter. Well, in one sense I am like you in this. I seldom think of it. I am *sure* it will take care of itself. God knows, if I do not; and I have such a loving trust in him that I do not feel uneasy or troubled about it at all.

Now in regard to your concluding point—God's foreknowledge, and the matter of sin in the world. You reject most vehemently the idea that God has foreknowledge, if I understand you. Very well. Suppose you say he has not. Perhaps that is according to your belief, and perhaps not. If he has not foreknowledge, then he is, to a considerable extent, human, as we are. He does not know how things will turn out, and this universe of his creation may be a failure or a great blunder. The anarchists and some of that class, I believe, insist that it is a blunder, and therefore blow themselves up with bombshells in order to express their disgust for God's work. If God has not foreknowledge, it relieves him of responsibility, and you might say he is not to blame for the sin and crime that exist. Now, this doctrine may be agreeable to you; but I

confess it would give me a rather uneasy feeling. It would destroy my faith in God, for I can not but think that he knows what he is doing; and although his plans may be beyond the conception of our human minds, yet I prefer to believe that he is infinite, and knows the future as well as the past. As I suggested in our last issue, this is deep water for all of us. If I understand you, you do not accept the doctrine that we are free agents. That relieves us of responsibility, and it would relieve the criminals in our jails of responsibility. I confess I should not have very much faith and energy in telling some poor feeble brother, steeped in sin and crime, that he probably could *not* do any better if he tried to. "Whatsoever a man soweth, that shall he also reap," seems to be written not only in the Scriptures but all over the face of nature. No, friend D., I am not able to prove or to show you *exactly* how it is that God could consistently create human beings knowing beforehand that they would go to ruin. Now, mind you, when I say that I can not understand it, I by no means mean to say that it can *not* be explained. I think I can get a *glimpse* of the matter, as I told you in our last issue. This thing we know: The choice is before us to do well or to do wickedly; and every man is responsible for his acts unless he is crazy. If he is crazy, then his responsibility ceases. But I prefer *not* to be crazy, even though it involves responsibility. You say you have laid this question to scores of priests and ministers. I can readily imagine how they might turn their backs. If they judged by your talk and your manner that you simply wished to find fault, they might have decided that that course was best; and the few who told you that we have not the right of questioning what God does, perhaps gave in substance something like what I have said. You reject the orthodox God of the Christian. Now, without any desire to provoke controversy, I should be very glad if you would tell us just what you do think or believe in regard to foreordination. If you say as I do, that it is something you can not fully understand or explain, any more than the rest of us, then we stand side by side; and is not that the sum and substance of it all, anyhow? Christian people regard God as a father who loves his people, and is doing every thing he can to lead them to the highest and best that this universe affords. "Shall not the Judge of all the earth do right?"

HIGH-PRESSURE GARDENING.

BY A. I. ROOT.

MULCHING TOMATOES WITH PEAVINES.

In visiting my neighbor Green I noticed he had a plot of tomatoes looking unusually fresh and vigorous during this severe drouth; and the ground between the plants was entirely covered with peavines. After harvesting his early peas, the vines were pulled up and carried a short distance to the tomato ground. Said I: "Friend Green, where in the world did you get that idea?"

"Why, to tell the truth I did not get it anywhere. I sort o' worked into it. I have been protecting them from the dirt, and at the same time mulching the ground in this way for two or three years past."

"And is this the way you raised those extra nice clean tomatoes that you sold me so cheap for canning two years ago?"

He assented. Now, preparing stakes, driving them in the ground, and tying up the plants, is

a great deal of work, as I know by experience. Another thing, it is a sort of disagreeable piece of work that is liable to be neglected, gathering up the stakes and storing them away for another season; whereas the pea and tomato vines may be all plowed under right where they are, after frost has wound up the crop.

HIGH-PRESSURE GARDENING DURING A DROUTH.

We are at present having one of the most severe drouths I believe I have ever had any thing to do with since I have been in the gardening business. Besides the dry weather, we have had drying winds that seemed to lick up every bit of moisture, and almost make light of our efforts at watering. We have not yet sent out a strawberry-plant. We gather from letters and from the papers that the drouth is so general that it would be hardly wise for us to send out the plants, even if we succeeded in getting them in good order. Of course, all kinds of garden stuff are high; so are fruits and berries. Besides the good prices, this gives us an opportunity to test fairly a good many plans of irrigation. It is true, we can make the strawberry-plants boom by giving them plenty of water; but the amount of water needed is so great during such a time that it wants a millrace in place of a windmill. Our windmill would do pretty fairly, perhaps, for a quarter of an acre; but hardly that, however, when we have so many still days that one hardly knows which way the wind blows. We have soaked up our strawberry-beds where we are raising plants, a good many times; but the water must be put on again and again until it has a chance to get away down. I heard of a man who had been trying to make his lawn grow by sprinkling. The sprinkling did not do much good, however. Finally, one night he forgot to turn off the hose, and left the water running on a small spot all night. This had the effect of soaking up the ground a foot deep or more, and it made the lawn so mushy that, when he attempted to walk out near the end of the hose, his foot went down as if he were going into mire. After this the grass started and grew to his heart's content on this little spot; and that is just about the way we must do watering to make it avail. Of course, our 1600-barrel tank is pretty nearly full of water; but as we do not know how long this state of affairs will continue, we do not dare to draw it out much faster than the wind pumps it in.

There is one kind of irrigation that greatly pleases me. I knew of a friend of mine who was drawing water for his plum-trees, and so I decided to take my wheel and pay him a visit. I found something like 100 young trees bending down with fruit. He had mulched them around the roots with coarse manure, swamp grass, straw, spoiled hay, or any thing he could get hold of. Then he drew the water on a wagon, in barrels, and kept this straw mulch wet. Some of our own plum-trees were beginning to look sickly, and the plums were shriveling up and dropping off. I at once had a little dam made around the trees, so as to have a circle about six feet away from the trunk; and this dam was filled with water by means of a hose from our windmill tank. Then the water was filled with coarse strawy manure. This kept it from evaporating, and kept the ground moist. Well, you just ought to see those plum-trees pick up, start out new growth, and see the plums swell out and look plump and green. It is a decided success; and while plums are worth from four to five dollars a bushel, there is no sort of question but that it will pay—yes, even if you have to draw the water in barrels. Where the water is not too

far away. I think it will pay on peaches also, and possibly on apples. It will certainly pay to utilize all the slops and dishwater from the house, in time of drouth. Mulch the ground around the roots, and then pour on your slops. You see, after the fruit is nearly grown it takes only a little water to finish it up. Where blackberries are not attacked with the blight, it would surely pay to furnish water to finish up the ripening.

The only kind of plants we have now in our plant-gardens is celery—that is, aside from strawberry-plants; and to keep the celery doing well we have to keep soaking the beds with water almost every day. Our celery out in the fields is coming to a standstill, unless it be some on the lowest part of the creek bottom that is always wet.

Our two plants of the Timbrell strawberry have now increased to something like 30 or 40 strong plants. Half a dozen Greenville have increased to almost a hundred. This has been done, however, by an unstinted application of fine stable manure and plenty of water.

POTATOES DURING A DRY TIME.

The Early Ohios are just about dried up, and the tops are dead. As it is pretty nearly time for them to ripen, it is not altogether due to the drouth. The potatoes, however, will be small, and few in number. The Early Puritan held out better; but in a few days its stalks will also be dead and dried up. The Freeman potato held out quite a little better still; but the only real green tops on our upland are Lee's Favorite. These are looking passably green and luxuriant; but they are also an early potato. Now, down in the creek bottom we put out quite late some Rural New-Yorkers, and these are just a pleasure to look upon. The vines are dark green, rank and luxuriant, and they do not seem to be affected by the drouth at all. They are just now beginning to cover the ground pretty thoroughly. Last year, you may remember, the Rural New-Yorker gave us the only real fair good-sized potatoes we had; and it looks as if it might be something so this year. We should remember it is a late potato. It was planted last of all, and is on ground that is mostly low and wet, with a gravelly subsoil. Some parts of the patch, however, run upon tolerably high ground, and the potatoes look rank and strong, even here. I am beginning to think a good deal of the Rural New-Yorker. Somebody asked to-day the price on Early Ohio and Freeman potatoes. Now, this dry weather seems to be so widespread that potatoes are going to be pretty well up. In fact, they have advanced in the Cleveland market from \$2.25 up to \$3.00 a barrel already within a few days. I told our friend that I would not dare to offer seed potatoes at present for less than \$1.50 for the Early Ohio, and \$2.00 for the Freeman; and may be the price on the Freeman will have to be put up higher yet.

AMERICAN PEARL ONIONS.

Ours were all sold in the Cleveland market at about \$2.00 per bushel; and Mrs. Root urged me to plant *all* our ground to onions, and not try to raise so *many* things. If I knew that these white onions would bring \$2.00 a bushel, no matter how many I raised, I do not know but I would think seriously of doing so. They were ripe and dry, and ready to ship, just a little after we picked our last strawberries.

'POTATO-ONIONS.

The only kinds of potato onions we tested this season were the new white ones. They are sometimes called the White Multipliers. One thing that pleases me exceedingly about this White

Multiplier is, that it never sends up seed-stalks. You have not got to go through the patch and watch for them, and snap them off; neither will you have in your crop any tough hard onions caused by letting the seed-stalk grow a little before it was snapped off. The only drawback with this onion is, that it is not very productive—at least, I have not made it so. I first bought a pint of these white potato onions. They were not very small, any of them, so I succeeded in raising only about two quarts from the pint. I planted every one of the two quarts last September, and this spring all I have is a heaping half-bushel. How is that for yield? It is a little queer how multipliers behave. If you plant a little onion it grows the whole season and makes a big one. If you plant a big onion, this, too, grows a whole season, but it splits up into a lot of little ones—no going to seed at all. If I had to deal with them, however, I can not help thinking that some of them, *sooner or later*, would go to seed. There is another thing in favor of these potato onions: The work is nearly all done in the fall of the year, when you have plenty of time, and when the ground is nice to prepare. Fix your ground rich and fine in September; plant your onions, little and big, and they will almost take care of themselves until they are ready for harvesting. This year they were ripe almost as soon as the American Pearl; but perhaps the dry weather hastened their ripening, and very likely it made the onions smaller than usual, and thereby decreased the amount of crop. These White Multipliers, I understand, are now offered for sale so that they can be retailed at about a dollar a peck, or \$3.50 per bushel. They are about the handsomest onion in the world, but they are not quite as large, at least this season, as we should like to have them. But there are no thick necks at all. The tops all dry up and drop off by themselves. There is no topping to be done, if I understand them.

That low creek-bottom land is about the only place where we are going to have any kind of crop this season. We have already more cucumbers than our town can take care of. The seed was hastily drilled in, and has had very little attention since.

Just a word more about onions. About a year ago we sowed some White Victoria and Prizetaker seed on some very poor ground, hoping that they would make sets. They got to growing, however, during the fall rains; and when winter came they were rank green onions, looking nothing like making sets. We sold some of them for plants, in March and April, as I have told you; but as they were in an out-of-the-way place they never got hoed nor cultivated once; in fact, there was never any thing done to them after sowing the seed. Oh, yes! we did break off the tops once or twice, that were trying to run up to seed. Well, about the middle of July one of the men mowed off the weeds and clover so we could find where the onions were, and we harvested several bushels of very nice White Victorias and Prizetakers. Of course, they were small in size, because of being so close together, and for lack of cultivation; but the above is certainly a very cheap way of getting a small crop of onions providing it will work every time as it did then. The ground was so very poor that weeds did not grow of any account until April showers brought them along. Just now we are improving the dry whether in overhauling our wind-mills, repairing our pumps, and fixing larger reservoirs to save up and hold till a time of need, the great floods of water that will soon come and run away if we do not hold on to them. Water, water, water, is the one thing to make gardens boom during a time like this.

POTATOES—BEING IN HASTE TO DIG THEM.

Unless I wanted the land very much for some other crop I would not dig potatoes until the vines were entirely dead and dry. One season I had a patch of Early Ohio; and during a severe drouth they were so near dead that I gave them up. In fact, I began digging; but the yield was so small that I stopped in disgust. Soon after, abundant rains came, and the vines started a second growth. Now, even though these were early potatoes this second growth kept on until frost; and, to my astonishment, I had an excellent yield of nice, smooth, good-sized potatoes. Friend Terry, in his new book, relates two similar experiences. If blight does not set in, I think it will pay to irrigate potatoes, even here in Ohio, providing arrangements are made so as to have water that is available.

STIRRING THE SURFACE, VS. IRRIGATION.

A good deal has been said on this matter, and no doubt there is much in it. For instance, I had five plum-trees that blossomed full; and, under the influence of spraying, all five started out loaded with fruit. Four of them were on ground bearing a crop of rye, and, of course, they did not get any surface cultivation. The fifth, only a rod or two away from the other four, was in the corner of a patch of corn, therefore the surface was cultivated and hoed, and the ground was kept soft and tolerably loose. This last one held its fruit fairly, while the others dropped the most of theirs. In fact, two of them had lost all their fruit before my attention was called to it. Then we dug up the ground loose, and applied water to all of them, as I have told you elsewhere. Keeping the ground loose and mellow certainly answers to a great extent in place of water; but with a heavy crop of fruit, even this surface stirring of the soil, no matter how well it is done, during a very severe drouth, would probably be insufficient to mature all the fruit. Of course, if the tree contains more fruit than it ought to bear, thinning out by hand should accompany the stirring of the soil, and perhaps also the watering. I am fully satisfied, however, that many crops of fruit that are lost, even after the fruit is almost matured, might be saved by judicious care just before ripening. Where fruit is scarce and high, as it is now, a little labor will afford a tremendous reward. We ourselves have lost a good deal by waiting for rain that we felt sure was just going to come. The barometer went down, and the Weather Bureau gave notice of local showers; but the showers were so small that they amounted to only a sprinkle. It would have paid us better to put on the water without waiting; for when the ground gets so very dry, there is not much danger of the possibility of getting on too much water. When the ground is only a little dry, I have known a heavy application, just before a series of soaking rains, to give the crop too much wet for its good. But this can not very well happen when the ground is as dry as it is now. One thing more: Please remember that, even if a crop does not pay the entire cost, it is better to apply water when the fruit is almost matured than it is to neglect it, and have it an entire loss. In other words, it is better to add a little more expense, and get half a crop, than it is to go through all the motions of preparing the ground, sowing the seed, and cultivating, and then get nothing at all. It is better to have half or three-fourths pay expenses than to have nothing at all toward paying those expenses; and a good many times, where there is a general scarcity, the crop can be sold at a price so much greater that it will cover all expenses and give a profit. Have you carefully figured this all out? When I first began riding the

wheel, Ernest told me I fell a good many times when I did not need to. I lost faith in myself and in the wheel, and tumbled off. Said he, "Just keep your seat, and keep trying to keep up, and pretty soon you will be surprised to find that there is almost no need of falling off at all." It is just so in raising crops. While there is life in the crop, there is hope; and a great many times you may be surprised to find yourself coming out ahead, when you are sorely tempted to give it all up and let it go.

TRADE NOTES.

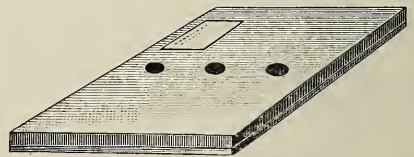
BEE-ESCAPES AN ASSURED SUCCESS.

If there is any one implement, brought out in the last two or three years, that is proving to be a great boon to the bee-keeper, it is the bee-escape. Reports show that there is little need now of smoking or brushing the bees out of section-crates. A dozen or so escapes placed under well-filled supers toward night will show as many supers the next morning with scarcely a bee in them. These supers can be taken off, and empty supers be put in their place, and no time is lost to the bees. The old way of removing sections was to smoke the bees down through the sections, following up the operation with brushing and shaking. Bees that have been smoked and shaken up in this way will not get into good working trim again for some little time. Perhaps the bee-escape that has given the best satisfaction is the Porter. Our neighbor Burt is very much pleased with its workings. We do not remember to have ever read of more than one unfavorable report; and even that bee-keeper later on acknowledged his mistake and gave a big testimonial as to the success of what he had once condemned.

It seems that, over in England, they are experimenting with bee-escapes, or what our English cousins call "super-clearers." We find the following in a late issue of the *British Bee Journal*:

WEBSTER'S CHEAP SUPER-CLEARER.

The clearer illustrated below is a very simple arrangement. A three-quarter-inch board has three circular holes, about one inch in diameter on the upper, but "countersunk" on the under side; and although the whole of the enlarged under surface of the hole is covered with woven wire, two channels cut in opposite directions and deep enough to allow passage for a single bee at a time effect a clearance. Concerning the appliance the maker says:



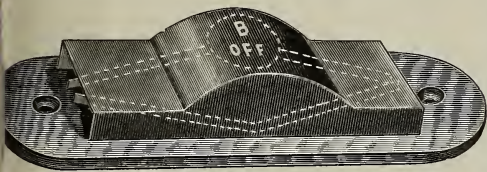
NO. 1.

"The price is very low, and you get a 'clearer' which I find, after two seasons' trial, acts just as effectively as the original 'Webster's super-clearer,' or any other, up to a certain limit of time; but it must not be left on the hive more than twelve hours, as the bees commence to find their way back after that time; perhaps a dozen will get back during the next six or seven hours."

MEADOWS' "B-OFF" SUPER-CLEARER.

This is neither more nor less than an adaptation of the American "Porter bee-escape," the difference consisting of providing two exits for the bees against one in the latter. The illustration shows only the escape proper; but it should be added that,

in order to complete the appliance, the "escape" must be affixed to a platform similar to that used with the "Porter." Mr. Meadows, however, pro-

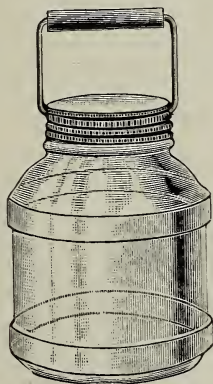


NO. 2.

vides bee-space on both sides of the platform, so that supers may be cleared of bees either on the hive or after removal from it, by reversing the platform as required.

A GLASS HONEY-PAIL.

Many housekeepers who are also honey-users, will consider that Mr. T. B. Blow, of Welwyn, has filled a want by introducing this article as a new "bee-



NO. 3.

appliance." The cut shows what it is like, and we may add that the pail is of clear glass; the bands—also of glass—above and below, giving it strength and durability. It holds about eight pounds of honey, and has a strong screw-cap of plated iron, with handle (as shown). It is not intended to be used once and then cast aside, as with ordinary glass jars, but as a "family jar," to be refilled as required.

Model 2 is quite similar in principle to the Porter, and we judge it may be a slight improvement. We commend it to the attention of the Porters.

Since publishing the article from Mr. H. P. Langdon, on his non-swarmers, the following has come to hand from E. Kretschmer. The device, although the same in principle, so far as we are able to judge, is a decided improvement over that sent out by Mr. Langdon. The bees are directed toward the entrance more naturally, and the attachment to the hive does not require the boring of holes through the hive itself. It is quite impracticable to attach the Langdon device to chaff hives. That of Mr. Kretschmer can be fastened to any kind without boring holes. If the Langdon principle can be made to work, the Kretschmer improved device would have the preference.

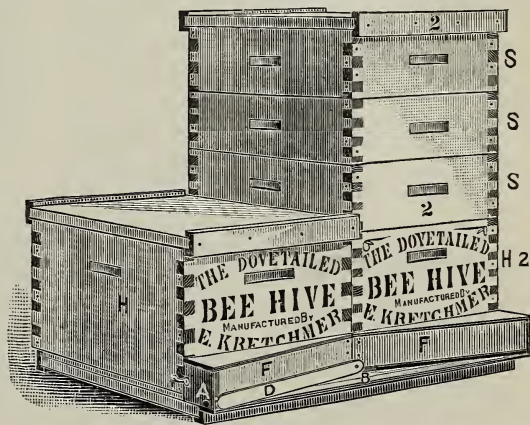
BEE-CONTROLLERS AND NON-SWARMING ATTACHMENTS; SOME FURTHER EXPERIENCE AND OBSERVATIONS.

For some years I have been experimenting with a device for controlling the movements of the bees at the entrance of the hives, but lately more as a non-swarming attachment. When, later, I learned that Mr. Langdon had a patent on a device similar in principle, although differing in mechanical con-

struction, I arranged with Mr. Langdon for its use under the patent.

We have to-day some 60 colonies, arranged mostly with our bee-controllers, and also quite a number with the Langdon non-swarmers; and in order that the reader may get a fuller idea of the workings of these devices I must refer back to the end of the winter.

Our bees came out of the bee-cellar in good condition—not a single colony was lost in winter, nor by spring dwindling. Now, one of the essentials to the successful working of either of these devices is, to set the colonies in pairs when first set on their summer stands; this we did with perhaps half of our bees, in order to continue the experiments of the year before. During apple-blooming we had splendid warm weather, and bees gathered honey to a considerable extent. Impatient to see the workings of the bee-controller, we placed several on some of our strongest colonies; gave them supers with comb built the previous year, and for the first time in thirty years of bee culture in Iowa we secured some comb honey from apple-bloom. Elated with our success we began moving some of



our other colonies into pairs; but we presume we were too hasty. These last-moved bees did not retain all their flying bees. No doubt many of the returning bees, finding their hive away from its original location, became confused and entered some other hive; and may not this be one cause of failure on the part of those who try the device too late in the season?

In the construction of the bee-controller we have placed the escape-cones in front, on top, on the end, and used them without cones; but we now prefer them in the end, with additional ventilators on top, as well as small return-holes, for the following reasons: Friend Langdon sent me a non-swarmers. On the morning of a warm day we placed it on two strong colonies. At noon we noticed several colonies hanging in front of their hive, the Langdon non-swarmers being completely covered. Next morning I found the closed colony dead—smothered—perhaps no fault of the device, but my carelessness in not shading the hive. It seems the bees clustered over the cone before all the bees had left, confining and smothering the remainder. By placing the escape-cone in the end of the controller, and partly concealing it within it, as it were, the returning bees do not seem to find it, but alight at the place of the usual entrance, run along the diagonal front, and are in the other hive before they seem to be aware that they are shut out from their own hive.

That but little or no honey is carried to the closed hive can quickly be seen without opening the hive. Usually on the second day the remaining bees begin to drag out the drones, and the drone brood soon follows. In a similar manner, then, when the honey-flow is suddenly cut short in the fields, if the weather is hot and dry, the worker brood soon follows. To prevent the destruction of the worker brood, we make a small hole in the top of the controller, away from the usual entrance-place, where scarcely any of the older bees find it; or, if they do, the downward entrance, leading to darkness, does not seem to induce them to use it; but a part of the young bees, that leave the hive for the first time,

leave the hive by way of this hole. They carefully note the place of their first exit, and return the same way. If these bees are permitted to re-enter their hive in the manner indicated, the worker brood is not destroyed; but if no after honey-flow is in immediate prospect, and this brood is of no apparent benefit to the bee-keeper, closing this hole with a little tin slide will soon end the open brood.

While the devices named are a great aid to the harvesting and finishing of comb honey, by preventing swarming, perhaps just when the combs are nearly ready to be capped, there are in this no rules without some exceptions. Usually when the controllers are adjusted no attention need be given them for a week; but if both colonies are quite strong they may have made preparations for swarming before the controller was adjusted; and while it prevents swarming from the hive from which the bees are excluded, as it were, it may heighten the swarming fever in the other colony; and a swarm may issue from that colony before the end of the expiration of the usual week's work. This may take place but once in 50 colonies (we had but one in 60); yet even then it may be avoided.

Depopulating one colony for three days seems to effectively remove their desire to swarm; therefore this colony, having been placed in a non-swarming condition for about a week, at the end of three days we change supers and bees over to the other hive, and now have this colony under control for a week, and work goes on uninterruptedly for a week. At the end of a week we remove full supers, set unfinished cases over to the other hive, add more supers, swing the metal door over to the other entrance, and work goes on another week. At the end of the week we again remove full cases, change back to the other hive, and so on once a week to the end of the season.

If, when first adjusting the controller, the colonies are of unequal strength, the supers are first placed on the weaker one, which may not be in condition to swarm for a week. Under such condition no change need be made until the end of a week.

The value of these bee-controllers has demonstrated itself to us very forcibly this season, at least so far; for, contrary to the reports received from our brethren east of us, we are receiving but little honey in sections. Colonies working singly are gathering just honey enough to place them in good swarming condition, neglecting the sections, while those colonies supplied with controllers are the only ones working in sections.

Red Oak, Iowa, July 18.

E. KRETCHMER.



Keep thee far from a false matter; and the innocent and righteous slay thou not: for I will not justify the wicked.—EXODUS 23: 7.

We have just made two "century runs." The first day we covered 106 miles, and the second day 110. A lady in the same party covered the same distance. We expect to make that "bike" visit quite a number of apiaries this summer. Of course, we expect to go along with it.

SOME complaint has been made about the shiny paper that has been used on GLEANINGS, because the light would reflect and make the pages hard to read. The last carload is a heavier paper, with a less glossy surface, and we feel sure that the superior printing will be appreciated by our subscribers. This number is printed on it.

THE editor of the *American Bee-keeper* is riding a bicycle. Good! It will be in order now for Bro. Hutchinson to get down off from his three-wheeled tricycle, and mount one of the luxurious pneumatic-tired safety bicycles.

Bro. York, of the *American Bee Journal*, if we may judge from the advertisements in his paper, is also riding a safety.

YESTERDAY we sent out 54 queens by mail from our own and neighbor H.'s apiaries, to Australia; and we expect that a very large percentage of them will get through alive and in good order. We do not say this to boom our own trade in queens, but to indicate to other queen-breeders that the business of sending queens half way around the world is now a decided success; and not only have we been successful, but other queen-breeders as well.

It just now occurs to us that we are not hearing from our lady contributors as much as formerly. We do not wish them to feel backward about "speaking in meeting." A very reasonable as well as decidedly fruitful theme upon which to write is the canning of all kinds of fruit in honey—is it practicable, and, if so, how? Incidentally, it would be in order to give us a few good recipes for making various kinds of honey-cakes. Mrs. Astell and Mrs. Harrison, some time ago, gave us some hints on this subject. Perhaps they can tell us more about it; and Miss Wilson too, we are sure, is in a position to give us some valuable hints also. Let us hear from many of the ladies.

VERY recently we have had sent us several little consignments of broken comb, to be rendered up by us, and the senders to be credited with the amount of wax secured, less the expense of rendering. We never really thought that this paid. Old combs necessarily take several times the bulk required to take the actual bulk of wax when melted into nice clean cakes. It is far cheaper to render out your wax at home, and send on the product to us, than to send comb that is all dirt and cocoons, paying extra freight for the extra bulk and dirt. Three lots of broken comb were sent us recently, from as many different parties. By mistake they were all mixed together. Although the broken comb made several bushels of "stuff," we secured from the lot, after a great deal of labor—a half a day's time—only 5 lbs. of wax. The combs had been worm-eaten, were dirty, and we almost hesitated to undertake the job at all. Let us say right here, that, if you expect good wax out of your combs, do not, for an consideration, let worms get into them. If you are going to render them up at all, put them into the solar wax-extractor at once.

KIND WORDS FROM THE BEE-KEEPERS' ENTERPRISE.

During years past, some exceedingly kind and encouraging words have come from time to time in regard to the department of our journal called the Home Papers; but among them all I do not remember of any thing like the following, taken from the *Bee-keepers' Enterprise*:

As to the world at large, I do not believe there is a religious paper published that has done more good than GLEANINGS' Home Papers.

Now, friends, please do not imagine that am vain enough not to think the above only good-natured mistake. If it were true, I should be sorry for the religious press of our land. The main point I would direct attention to this: The above appears in another journal and in a bee-journal too. For many years was the custom for bee-journals to pitch into each other, and especially to hold up the fault of brother-editors; hence it makes the above worthy of note. Does it not indeed foreshadow the coming of the new heavens and the new earth, when God's will shall be done on earth?

as it is in heaven? By the way, permit me to say that, although the *Bee-keepers' Enterprise* is young, it is a very clean and pure little journal. May it receive the support and encouragement it justly merits.

A. I. R.

BRO. YORK, of the *American Bee Journal*, commenting on the fact that the *Bee-keepers' Review* is going to try to have bee-keeping recognized at all the State Experiment Stations, states that he can not see why *every* State should spend its money for conducting its experiments. He suggests that, as Michigan already has one, that suffice for the North. He would have another one in Texas, for the South; and for the East, one in New York or Vermont; and for the West, one in California. We do not understand that Bro. Hutchinson would try to secure an apicultural experiment station in *every* State; but by making the effort there might be four or five States, variously scattered, that would establish such a station. Of course, it would be unnecessary to have *every* State experimenting and covering about the same ground. Some intelligent effort, supported by the bee-journals, ought to be made by some responsible body representing bee-keepers' interests; and the Bee-keepers' Union, as has been suggested, is just the organization to do it; for, under its new constitution, it can act in this matter as well as upon any other, with the consent of the Advisory Board.

FREE DISCUSSION, ETC., THROUGH GLEANINGS.

SINCE I have given a little space of late to those who wish to challenge the Christian religion, or, at least, some phase of it, a great many communications have come in, some on one side and some on the other, and many from men who take extreme views in certain directions. First, space will not permit us to use many of these articles; secondly, while we wish to give a full and free discussion of all subjects connected with home interests as well as bee culture, perhaps it may be well to add that the present managers of this journal are so well satisfied that the teachings of the Bible exhort to a higher state of morality, purity, and temperance than any other book in the world, we can not consistently give space to any thing that is decidedly irreverent toward that book. At the same time we are always glad to make room for any thing that will help people along in their search for truth and purity. A very few may charge us with being narrow-minded; to which I reply, that it is better to be narrow-minded than to poison the minds of the rising generation by something that leads only down to ruin and despair.

A. I. R.

EXPERIMENTS AT THE APIARY OF VERNON BURT; A SHORT "BIKE" TOUR.

LAST week we took a short bicycle run down to our neighbor's apiary, and, as fortune usually favors us on such occasions, we found the proprietor in the yard, evidently "waiting for something to turn up." We leaned the bicycle against a tree, and in a few minutes more were talking with "the bee-man we didn't know before." After we had both deposited ourselves on hives for seats we remarked:

"Your bees seem to be working some."

"Yes, they are bringing in some honey."

"Our bees have been getting honey from some source, but we can not decide what. We think it is probably from white clover."

"My bees," said our friend, "seem to be quite busy on common thistle."

"But," said we, "we did not know you had enough of them around here to make such a hum."

Although the sheep had gnawed the grass down closely throughout the yard, they had left the thistles entirely alone. It was about the only herbage of any kind that they did not touch. These Mr. Burt left, knowing that they sometimes produce honey.

"See," said Mr. Burt, rising from his seat; "here are five bees on one head."

True enough. We counted three on one head; four on another; several others, five; and on another one, six bees, all busy, almost standing on their heads trying to get down to the treasured sweets. We never saw bees working on any plants—not even the Chapman honey-plant—more busily than they were on these few thistles within range.

"This," said Mr. B., "is about the way bees are working on all the thistles."

"You must have a good many of them in your vicinity."

"Yes, a good many. I take no particular pains to cut them down. In dry seasons they are more apt to yield honey; and they can stand a drouth, because they send their roots down so deep into the ground."

"What is the quality of the honey?"

"It seems to be equal to clover," said he; "but it is not possible, following so closely on the heels of clover, to determine its quality exactly; but it certainly will not injure the fine quality of the clover."

Glancing at a few more thistles we said that we noticed that there were a good many more heads to open up.

"Yes," said Mr. B., "they will yield honey for a good while yet."

"How did those five-banded yellow bees pan out?"

"Good," said our friend. He then took us over to a couple of hives containing queens that came from Mrs. Atchley's apiary. They were beautiful bees, and they piled in a large amount of honey.

"Do you find them gentle?"

"I do," said he. "I am going to put in a good many more."

He had already placed his order, and his queens were coming in, in small installments, to take the place of hybrid queens.

"By the way, how do your hybrids compare, any way, with pure Italians?"

"Not any better, so far as I can see," he replied, "and they are not nearly as nice to handle."

"But don't they make whiter honey?"

"Perhaps a little; but I run principally, you know, for extracted honey."

"You certainly find that they shake off the combs better for extracting, don't you?" said we.

"That is of little importance," said he, "for I use bee-escapes. There, you can see them on the hives now."

"How long before the bees are out?"

"I do not know exactly," he replied; "but I know that the supers put on the night before are clear the next morning, with the exception of, perhaps, two or three bees."

"What escapes have you been using?"

"Mostly the Porter; and you remember that I got at your place two or three of the Lareese escapes. They are doing equally well."

"Oh! how about those Langdon non-swarmers that we gave you to try?" we exclaimed, changing the subject.

"It was so late that I did not have an opportunity to put them on; and, besides, I used chaff hives, and the Langdon devices require the boring of a hole right through the front of a hive. I do not think they will work; but another season I intend to give them a careful trial."

Some weeks previously we had given to Mr.

Burt a number of the 1893 Pratt automatic hives.

"How do these work?" we asked.

"Perfectly. Every one caught its swarm, and the bees went to work in their new apartments just as though they had been hived there in the good old-fashioned way."

"That is, you regard the Pratt hiver as a success?"

"I do, decidedly," he answered; "and when I establish my out-apiary next year I expect to use quite a number of them. I notice," said he, changing the subject this time, "what you had to say about swarms without queens generally going back to their own hives. I never had any trouble from two or more swarms without queens uniting in the air and going into the wrong hive, and I have practiced clipping queens for a good many years. I can not understand why Mr. Taylor's experience should be so different from mine."

"Well, there is one thing," we remarked, "when bees get on a perfect craze for swarming they will do almost any thing contrary to rule. At the time of Mr. Hutchinson's visit, we should judge that the swarming mania was having full sway."

"To change the subject, we notice that your hives are painted the other tint."

"Yes, I like it, and I don't see why you changed."

"Principally because the hive-covers got too hot."

"But," said he, "I paint my covers all white."

"Yes, we noticed that. As your hives are principally double-walled, the other tint would have the advantage; and painting the covers white would render them nearly as acceptable to the bees as any cover could be."

We hope, in a few more numbers, to present you a picture of Mr. Burt's apiary—not because it is a model in its way, but because it is a place where many of our new appliances will be tested, and the reports made in GLEANINGS. Mr. B. is a honey-producer. That is his principal business, although he has a farm of 25 acres that he runs in connection with the bees. A honey-producer is in position to test certain appliances intended for that class of people more thoroughly and more carefully than any one else. One may be a good experimenter but not a good honey-producer. Mr. B., as nearly as we can judge, combines the best qualities of both.

On page 635 of this issue, Mr. J. D. Fooshe, who raises for us in the South so many queens, gives some valuable improvements which he has made in queen-rearing. The idea of using drone comb for queen-cell cups is as novel as it is unique. If it will work successfully with others it will prove to be quite a boon. Queen-breeders will do well to read his article carefully; and we hope that many of them will give his method a test before the season is over, and report for GLEANINGS.

THE WELSH FOR THE WORD "BEE."

The editor of *Y Drych*, a Welsh paper printed in Utica, N. Y., kindly informs us that the word bee in Welsh is *gwenynen*; bees, *gwenyn*; honey-bees, *mêl-wenyn*; a honey-bee, *mêl-wenynen*; the honey-bee, *y fêl-wenynen*; the honey-bees, *y mêl-wenyn*.

TWO SWARMS UNITE WITHOUT A QUEEN, AGAIN.

As an additional proof of our proposition some time ago, that swarms in the air, without queens, are not nearly so apt to unite, the following, just received, will speak for itself:

In regard to what Mr. Hutchinson says on page 614, about swarms without queens returning and

going into the wrong hive, I wish to say that, for the last ten years, I have had all my queens clipped, and never knew a swarm to go back into any other hive than their own. During that time I have averaged about 40 colonies each year. I can not see why Mr. Taylor's bees should act so differently from mine.

JOHN MAJOR.

Cokeville, Pa., Aug. 4.

Remember, we do not say that swarms will *always* go back to their hive when not accompanied by the queen. We are simply trying to get at the *general* rule. It may appear that no particular importance attaches to this; but if swarms are less apt to unite when the queen of the parent colony is clipped, it is one point in favor of clipping, or, what may be practically the same thing, using drone-guards or Alley traps over the entrances. Let's have reports.

THE BUSINESS OF COLLECTING POSTAGE-STAMPS.

ONE of our subscribers, Mr. H. A. Bricker, of Bellevue, Pa., who makes a business of collecting stamps, suggests to me, in a pleasant letter, that I probably made a mistake, and that those who collect stamps at the present time do not let them go into the hands of those who would defraud the government. He explains that a collection of the stamps that have been used in the United States, since they were first introduced, teaches us both history, geography, and politics, besides giving us excellent portraits of some of America's best and greatest men; and, further, that this craze for stamps teaches the child, man, or woman, a great deal that they might not have known otherwise. The boy who is a stamp-collector will often know very much more than his teacher, in regard to matters connected with the history and politics of our country. I am always glad to be corrected. I will simply say that I got my information in regard to the matter of passing canceled stamps from no less authority than the *Scientific American*. As a proof of what friend Bricker says, he tells us that one-cent stamps used before 1870 are worth 3 cts. each; five and ten cent stamps, 15 cts. each, etc. Of course, nobody would advertise to pay more than the face value of a stamp, if he were going to try to defraud the government by using it again.

POTATO-BUGS—THE OLD-FASHIONED KIND THAT FLY.

SINCE the dry weather, the new old-fashioned bugs, or old new-fashioned bugs, as you may choose to call them, have been doing a great deal of mischief in our vicinity. I remember of seeing them when I was a boy, between thirty and forty years ago; but the later generation hardly seems to know what to make of them; and, in fact, they are getting to be a rather serious problem with the old as well as with the young potato-growers. On our ranch we tried pyrethrum, then Paris green; but as that did not seem to bother the bugs very much we began to drive them off as we used to do years ago. This, however, is too slow and uncertain. They come back again and do a pile of damage in just a little while. Finally I told the boys to take hoes, sticks, and their feet, and just "make 'em sick." That did the business. You take a man with big feet, and he can get away with a good lot of bugs by trampling them in the dirt. Where the ground is as soft as ours is, however, he has got to give his heel or toe a twist, or Mr. Bug will get up, shake off the dust, and scamper off, not very much hurt. I wrote to friend Terry, and told him I wanted to know right away what to do—that is, if there was any thing better than our way. He says he does not know that he can help us much. He says, however, after driving them